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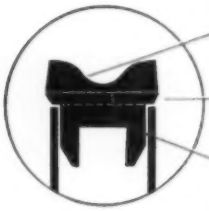

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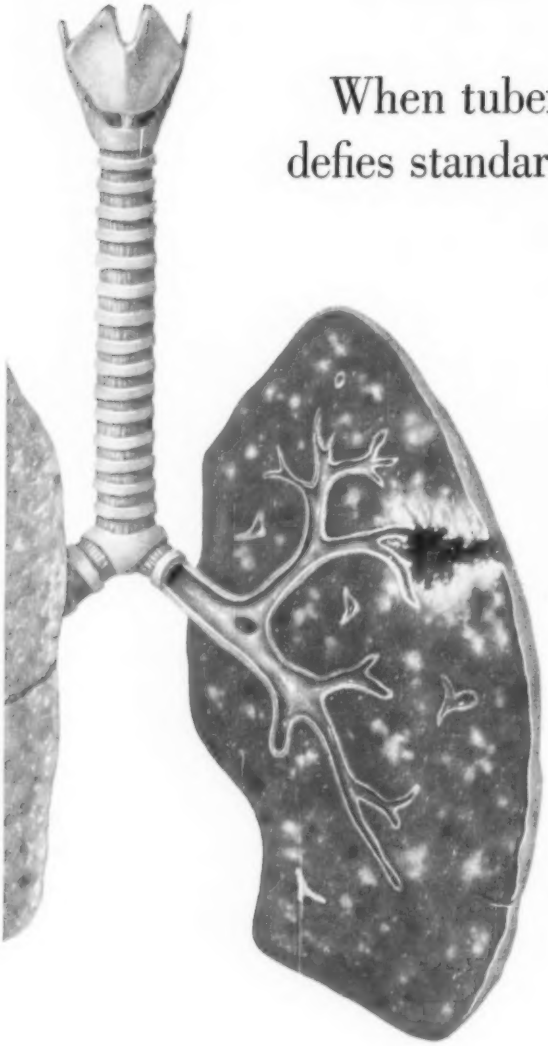

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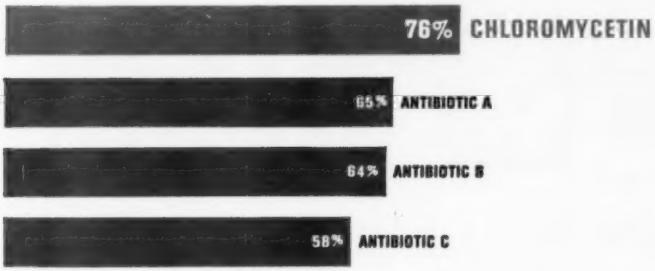

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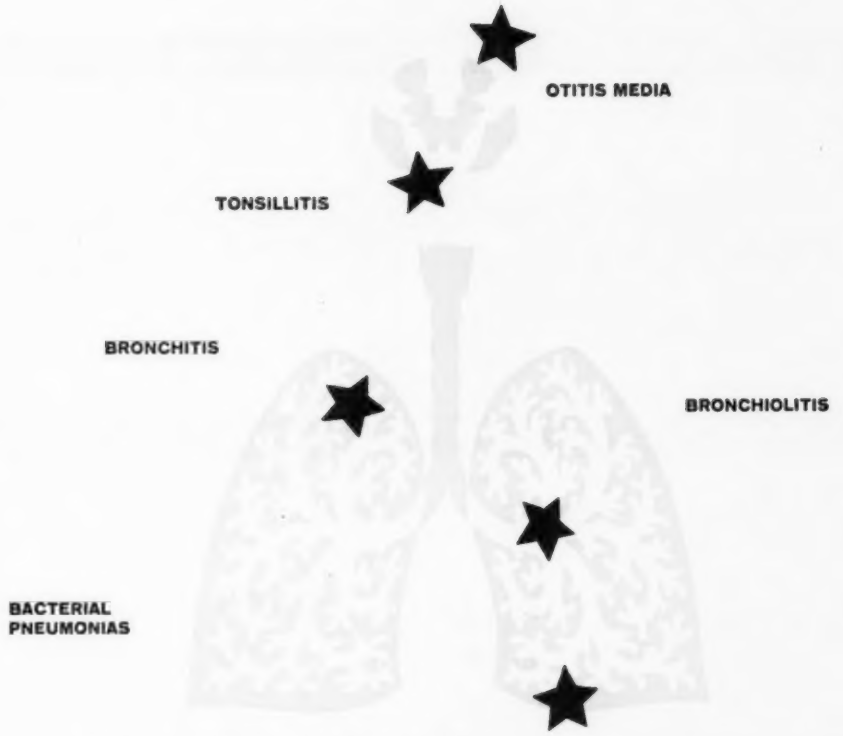

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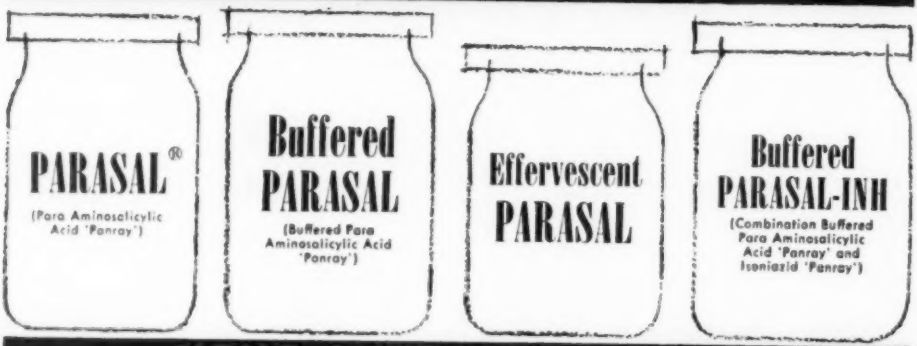

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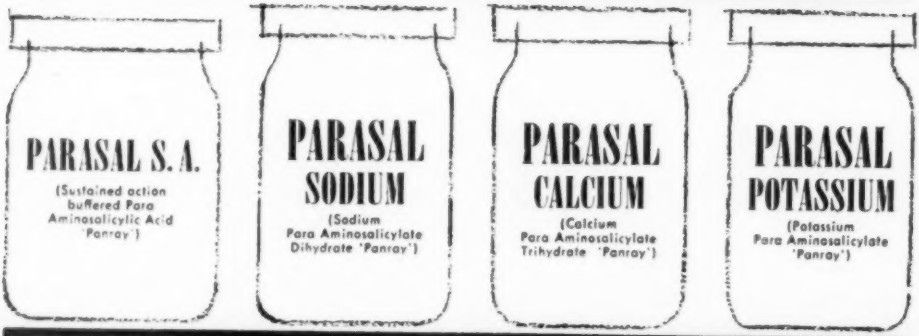

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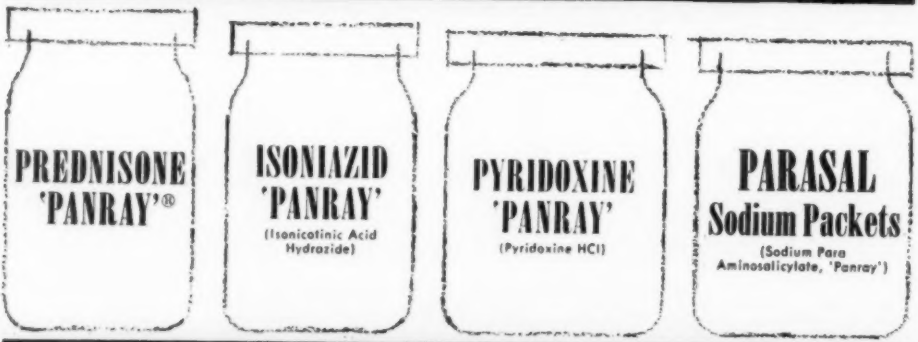

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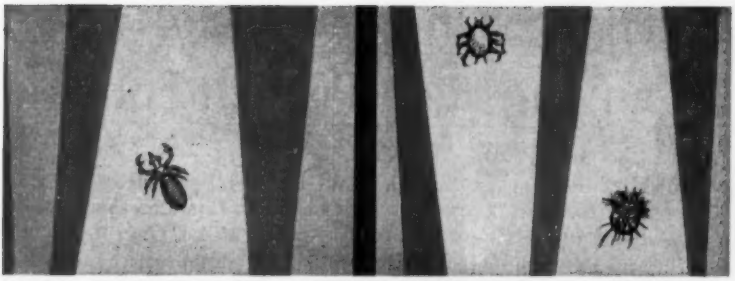

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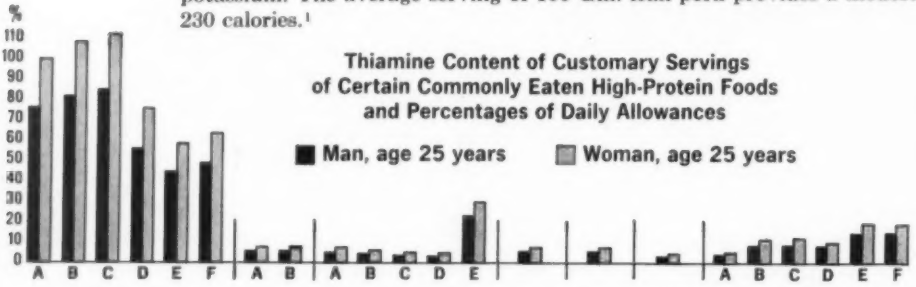

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1. Leverton, R. M., and Odell, G. V.: The Nutritive Value of Cooked Meat. Oklahoma Agricultural Experiment Station, Oklahoma State University. Miscellaneous Publication MP-49, 1958.

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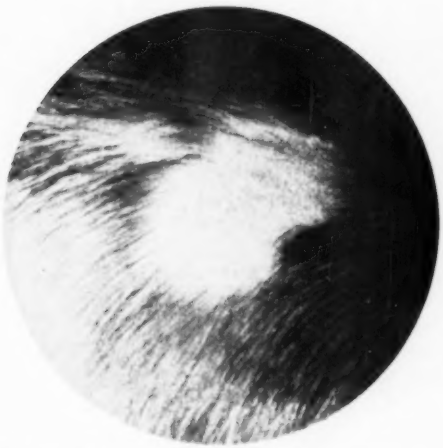
Schering

In tinea capitis



Before FULVICIN: Tinea capitis *(Microsporum audouini)* in a 7-year-old boy.

After FULVICIN: Normal, new hair growth after 6 weeks of oral therapy.

Photos courtesy of M. M. Nierman, M.D., Calumet City, Ill.

Lesions clear, cultures become negative in

tinea corporis: 4 to 5 weeks[1]
tinea cruris: 4 to 6 weeks[1]
onychomycosis: 4 to 6 months[1]
tinea pedis: 6 to 8 weeks[1]

first *oral* fungistat to penetrate keratin *from the inside*... acts to check invading ringworm fungi *(Microsporum, Trichophyton, Epidermophyton)*...usually well tolerated, side effects rare in therapeutic doses.

For complete information about dosage, indications and precautions consult Schering Statement of Directions.

Packaging: FULVICIN Tablets, 250 mg., bottles of 30 and 100.

1. Robinson, H. M., Jr., *et al.*: Griseofulvin, Clinical and Experimental Studies, A.M.A. Arch. Dermat., in press.

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Charles F. Manz
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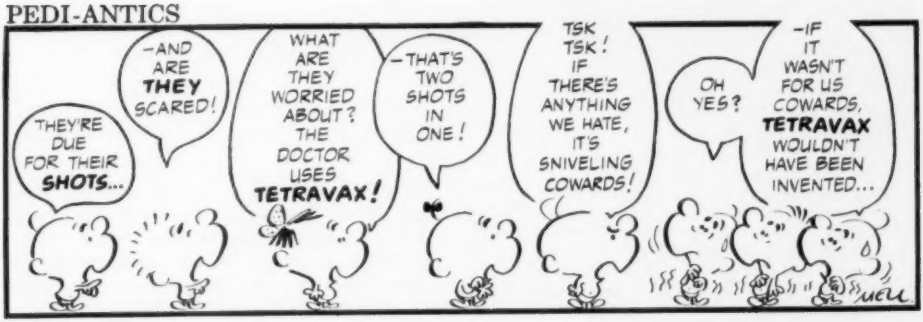
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WHAT ARE THEY WORRIED ABOUT? THE DOCTOR USES TETRAVAX!
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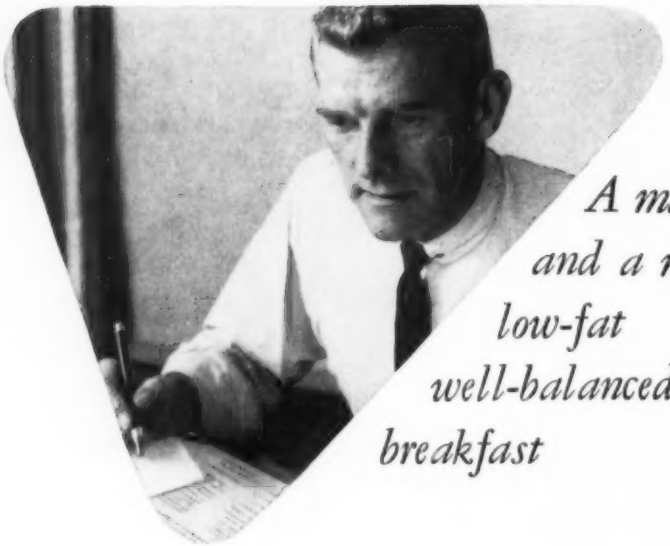

A man of 45 and a moderate low-fat well-balanced breakfast

In the middle years when a moderate reduction of fat in the diet is indicated for the maintenance of health and well-being, a basic cereal and milk breakfast merits consideration. Its fat content of 10.9 gm. provides 20 per cent of the total calories. *Thus it is a moderate low-fat breakfast.* As shown in the chart below, it provides for this age group and for most others about one-fourth of the recommended dietary allowances of protein, important B vitamins and essential minerals. The Iowa Breakfast Studies demonstrated that a *well-balanced cereal and milk breakfast* increased mental and physical efficiency during the later morning hours and that it was nutritionally efficient.

recommended dietary allowances and the nutritional contribution of a basic cereal and milk moderate low-fat breakfast*

Menu: Orange Juice—4 oz.;
Cereal, dry weight—1 oz.;
Whole Milk—4 oz.; Sugar—1 teaspoon;
Toast (white, enriched)—2 slices;
Butter—5 gm. (about 1 teaspoon);
Nonfat Milk—8 oz.

Nutrients	Calories	Protein	Calcium	Iron	Vitamin A	Thiamine	Riboflavin	Niacin equiv.	Ascorbic Acid
Totals supplied by Basic Breakfast	503	20.9 gm.	0.532 gm.	2.7 mg.	588 I.U.	0.46 mg.	0.80 mg.	7.36 mg.	65.5 mg.
Recommended Dietary Allowances—Men, 45 Years (70 kg.—154 lb.)	3000	70 gm.	0.8 gm.	10 mg.	5000 I.U.	1.5 mg.	1.8 mg.	20 mg.	75 mg.
Percentage Contributed by Basic Breakfast	16.8%	29.8%	66.5%	27.0%	11.8%	30.7%	44.4%	36.8%	87.3%

Cereal Institute, Inc.: Breakfast Source Book. Chicago: Cereal Institute, Inc., 1959.
Food & Nutrition Bd.: Recommended Dietary Allowances, Revised 1958. Natl. Acad. Sci.—Natl. Research Council Publication 589, 1958.
Watt, B. K., and Merrill, A. L.: Composition of Foods—Raw, Processed, Prepared. U.S.D.A. Agriculture Handbook No. 8, 1950.

**The allowance levels are intended to cover individual variations among most normal persons as they live in the United States under usual environmental stresses. Calorie allowances apply to individuals usually engaged in moderate physical activity. For office workers or others in sedentary occupations they are excessive. Adjustments must be made for variations in body size, age, physical activity, and environmental temperature.*

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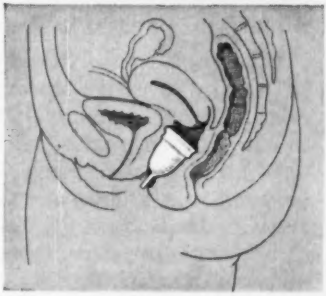
the safe and sanitary menstrual cup

You can prescribe Tassette with full assurance that your patient will find a safe, effective and completely acceptable answer to her menstrual control problem. *Tassette*, made of soft pliable rubber fits anatomically at the mid point of the vaginal wall and acts as a catch basin for the menstrual flow (see anatomical drawing). It is easily folded, needs no inserter, and can be simply emptied and replaced as needed. Tassette requires no measurements or fitting, and can be worn with complete comfort at all times.

Tassette permits your patient to swim, dance and engage in any activity because it catches the flow and seals it off completely. Thus there is no odor or possibility of leakage or staining as may occur during periods of heavy flow when tampons are used. There is no danger of chafing, irritation or infection, and no belt is required, as with ordinary sanitary napkins.

Tassette has many medical applications other than its use as a menstrual cup. During the intermenstrual period it provides the most satisfactory and safe method for collecting vaginal, cervical or uterine secretions for diagnostic purposes. Tassette has also been used to insure against leakages in vesico-vaginal fistula.

Modern internal menstrual control is now accepted by the medical profession and Tassette is widely recommended by gynecologists in place of sanitary napkins and tampons. In order to acquaint you with Tassette this special offer is made: Send $3.50 (reg. price $4.95) for one Tassette with complete directions, postage prepaid. Tassette guarantees satisfactory use for two years or your money back.



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Diagnostic Quandaries

Colitis? Gall Bladder Disease?
Chronic Appendicitis?
Rheumatoid Arthritis? Regional Enteritis?

A DISEASE that is frequently overlooked in solving diagnostic quandaries is amebiasis. Its symptoms are varied and contradictory, and diagnosis is extremely difficult. In one study, 56% of the cases would have been overlooked if the routine three stool specimens had been relied on.[1]

Another study found 96% of a group of 150 patients with rheumatoid arthritis were infected by *E. histolytica*. In 15 of these subjects, nine stool specimens were required to establish the diagnosis.[2]

Webster discovered amebic infection in 147 cases with prior diagnoses of spastic colon, psychoneurosis, gall bladder disease, nervous indigestion, chronic appendicitis, and other diseases. Duration of symptoms varied from one week to over 30 years. In some cases, it took as many as six stool specimens to establish the diagnosis of amebiasis.[3]

Now treatment with Glarubin provides a means of differential diagnosis in suspected cases of amebiasis. Glarubin, a crystalline glycoside obtained from the fruit of *Simarouba glauca*, is a safe, effective amebicide. It contains no arsenic, bismuth, or iodine. Its virtual freedom from toxicity makes it practical to treat suspected cases without undertaking difficult, and frequently undependable, stool analyses. Marked improvement following administration of Glarubin indicates pathologically significant amebic infection.

Glarubin is administered orally in tablet form and does not require strict medical supervision or hospitalization. Extensive clinical trials prove it highly effective in intestinal amebiasis.

Glarubin*

TABLETS

specific for intestinal amebiasis

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Write for descriptive literature, bibliography, and dosage schedules.

1. Cook, J.E., Briggs, G.W., and Hindley, F.W.: Chronic Amebiasis and the Need for a Diagnostic Profile, Am. Pract. and Dig. of Treat. *6*:1821 (Dec., 1955).

2. Rinehart, R.E., and Marcus, H.: Incidence of Amebiasis in Healthy Individuals, Clinic Patients and Those with Rheumatoid Arthritis, Northwest Med., *54*:708 (July, 1955).

3. Webster, B.H.: Amebiasis, a Disease of Multiple Manifestations, Am. Pract. and Dig. of Treat. *9*:897 (June, 1958).

*U.S. Pat. No. 2,864,745

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Journal of Public Health

The importance of health education for community health has seldom, if ever, been better stated than in this address. Education is necessary for the governmental authorities, for the technical personnel, and for the public. The why is explained by Gaylord Anderson, and one can only say—this you must read!

HEALTH EDUCATION—A ONE-WORLD CHALLENGE

Gaylord W. Anderson, M.D., Dr.P.H., F.A.P.H.A.

A FEW YEARS AGO the late Dr. Rosenau, whose spirit I feel hovers over any public health meeting in this country, left us a thoughtful and inspiring definition of his concept of preventive medicine. Were Dr. Rosenau still alive, he would, I am sure, permit me to make a slight alteration, substituting for the phrase "preventive medicine" the term "world health," for his vision of preventive medicine and public health recognized no international political barriers —to him the attainment of health was indeed a one-world challenge. With this modification, I should like to share with you Dr. Rosenau's valedictory to a student group:

"World health dreams of a time when there shall be enough for all, and every man shall bear his share of labor in accordance with his ability, and every man shall possess sufficient for the needs of his body and the demands of health. These things he shall have as a matter of justice and not of charity. World health dreams of a time when there shall be no unnecessary suffering and no premature deaths; when the welfare of the people shall be our highest concern; when humanity and mercy shall replace greed and selfishness; and it dreams that all these things will be accomplished through the wisdom of man. World health dreams of these things, not with the hope that we, individually, may participate in them, but with the joy that we may aid in their coming to those who shall live after us. When young men have vision the dreams of old men come true."

This vision of Dr. Rosenau's is in itself an inspiration to anyone who is interested in the problem of world health. There is one phrase in it, how-

ever, that is of particular significance for us today. When Dr. Rosenau says that these dreams of health "will be accomplished through the wisdom of man," he expresses his belief that these social, economic, and scientific advances are not to come through mere accident or through any divine dispensation but are to be achieved through wisdom, wisdom that is acquired through education. He has thus placed health education as the ultimate force in the improvement of the health of mankind in the years that lie ahead and in the various regions of the earth where there is still so much to be accomplished in the control of avoidable illness.

For many years it has been my practice in discussing public health measures with my students to group these into three categories: regulation, service, and education. Regulation is the simplest of these measures. A legislative body, or a health department endowed with quasi-legislative authority, passes a law or regulation which is usually of such a character that it protects the health of a large number of people. Then its enforcement is entrusted to a small corps of individuals who, through their activities, protect the health of the community. For example, a law may be adopted requiring the pasteurization of all milk sold within a state or a city and the health department is empowered to enforce this regulation through the use of its inspectors. You and I, as taxpayers, play no active part in this program (other than paying the bill), for this small corps of inspectors does the work for us. We derive protection from their activities and are protected whether or not we understand or appreciate their work.

On the other hand, it would be folly to believe that regulation can be as simple or as independent of education as I have just implied. The regulating body will not adopt a new ordinance until it has been educated to the need for, and value of, such an order nor can the health department enforce its provisions unless the appropriating body makes available the funds necessary for employment of the required personnel.

Furthermore, no regulation, even though its legality is upheld by the highest court of the land, can be enforced, unless there is public acceptance of it. I recall only too well a community of some 25,000 population which some years ago tried to shift almost overnight from 25 per cent to 100 per cent pasteurization. An impetuous health officer, ignoring advice that he go slowly, used his authority to order community-wide pasteurization on a permanent basis and stubbornly clung to his decision in spite of extensive public protest. Certain leaders of a nonunderstanding public challenged the legality of his decision in court where, incidentally, Dr. Rosenau appeared as one of the witnesses in defense of the regulation.

It was only a momentary satisfaction when the court upheld the legality and constitutionality of the ordinance, for in the forthcoming mayoralty campaign pasteurization became a deciding issue in the election of a candidate whose sole platform consisted of two planks—"get the streetcar tracks off Main Street and repeal the milk ordinance." With such a profound program for civic improvement, he won an overwhelming victory, discharged the health officer, and replaced him by one who acceded to his demand that the pasteurization ordinance be repealed. Thus a constructive public health program based on proved scientific fact and backed by regulatory authority was nullified, not because of lack of understanding on the part of the regulatory or appropriating body but simply because the public had not been educated to the value of this form of protection and was, therefore, unwilling to accept it. The result was manifest, namely, that the milk sanitation pro-

gram of the community was set back from ten to twenty years until such time as the wounds caused by this episode had healed and an uninformed public in whom various prejudices had been aroused slowly acquired a better understanding of the value of pasteurization.

If one may learn a lesson, and we should all learn from our failures as well as our successes, it is that education is fundamental to the regulatory process. However attractive may be the possibilities for disease control through regulation, we cannot, in a democratic society, exercise this authority without regard to its acceptance by the people who are to be subjected to regulation. This acceptance in a free society is not to be granted by mere bowing of the head in acquiescence to superior authority but rather through understanding of the reasons for, and the need of, regulation. If we believe in democracy rather than dictatorship—if we believe that the people collectively have a right to decide for themselves—then we must accept the fact that education is fundamental to health progress and that without this education the best of programs will fall short of their objectives.

As we reach outside of our own nation and outside some of the democratic societies in other parts of the world, and see the upsurging of the people in some of the less developed areas and their demand for independence and self-government, we must recognize that these very people will be faced with serious health problems in the years that lie ahead. Some of these areas are those in which at the moment health problems are the most severe. Some of them are areas where the regulatory approach to control offers great possibilities of almost dramatic progress. Many of them are also areas where education has not been as advanced as in various parts of the Western world. In these areas we shall inevitably see an increased need for governmental regulation in health, but the effectiveness of these measures will, as in this country, depend upon the extent to which they may be accepted by a people who are becoming increasingly conscious of their right of self-determination and increasingly resistant to any suggestion of dictation by government. Here, unless we have health education commensurate with the needs of the people and with the growth of regulatory programs, we shall see such programs fail of their accomplishments and the people left in their present unfortunate condition solely because they do not understand the reason for and the need of measures which are being adopted for their protection.

Last evening at the international dinner, as I saw the United States make gifts of three million dollars to the World Health Organization to aid in its malaria control program and two million to the Pan American Health Organization, I conjured up visions of what might be accomplished thereby. I had visions also of regulation, some of it possibly distasteful to some persons, and I uttered a silent prayer that in development of this program those responsible would not forget the need for educating the public so that such measures would be accepted and that through this education the people of these areas would be prepared to continue such measures after the special grant funds are exhausted.

The second approach to the solution of any public health problem is through the medium of service. This again is a simple measure in theory but, like regulation, must rest on sound public understanding. It is a simple idea to develop a program of service to individuals, each of whom, through the acceptance of this service, is individually benefited. The community as a whole benefits to the extent that this service is accepted by a large enough group of individuals. This service may be so simple a thing as immunization against a certain infection, hospitalization for

a communicable disease, provision of facilities for the better care and protection of women during childbirth, or the conduct of conferences or clinics for the health protection of their children. It may be a program of service in the diagnosis and treatment of a chronic degenerative disease.

Regardless of the nature or purpose of this service, there can be no benefit whatsoever unless the people, to a sufficient degree, avail themselves of the protection afforded through it. The best immunization clinic in the world is of no value if no child is brought to it for protection. The best hospital is valueless if no patient seeks its shelter. Neither of these will occur unless the individual has knowledge of the benefits to be derived from this service, for without such knowledge there is slight incentive to either seek or even accept a proffered service.

I recall only too well a New England city that, prior to beginning a mass diphtheria immunization program, had the unenviable distinction of the highest diphtheria death rate in the United States. A mass immunization program was conducted, utilizing almost every conceivable device to bring to the attention of the public the facilities offered through the physicians' offices and clinics—lectures, parades, flyers, radio announcements, even refunds of fares by the streetcar company if a woman accompanied by a child got off the car in front of an immunization clinic. The results were dramatic, with a tremendous outpouring of the population for immunization and a sudden drop in the diphtheria case and death rates. Unfortunately, however, within five years the rate had returned to one of the highest in the continental United States, for there had been no real education. What had occurred had been a semihysterical response to propaganda without any real understanding on the part of the public and therefore, in the absence of the highly emotional program of propaganda, no continuing demand for immunization service through the office of the physician or through the clinics that were continued from year to year.

But it is not only in our confusion between propaganda and education that we have failed in our service programs. I recall only too well standing in an Egyptian village where wells with appropriate hand pumps had been installed along the street that paralleled the irrigation canal. The water in these wells was of good quality and the pumps were in good condition but as I stood there I saw a housewife come from her mud hut with a jar on her shoulder, walk within a few feet of a pump, and proceed to the edge of the canal where she filled her vase with the filthy, slimy canal water. As she did so, she paid no attention to the accumulated filth, floating vegetation, and even a dead burro floating less than fifty feet from the spot where she filled her jar, nor could she be aware of the bacterial life with which this water was teeming.

As I reflected upon this incident and her obvious rejection of a safe water supply in favor of one that I knew to be unsafe, I found myself thinking of this lady not as ignorant but rather as uneducated. Within her pattern of thinking she was doing something very logical when she turned to the canal for water for her family. To her, the water in that canal was something very vital, for turned upon the land it meant food, and food meant life. Without the water there could be no life. Thus, within her culture and her reasoning that canal water was good and therefore was usable. It took a different level of understanding and a certain element of education to make her realize that this canal water, that she had grown up to respect, was less desirable than the new source of water drawn from the ground and to which she had, over the years,

been completely unaccustomed. The problem here was not one of service, for service was available; it was one of education and an education that could penetrate fundamental concepts deeply ingrained within her being and logical to her way of thinking.

By way of contrast, I often think of the day when, in Santiago, Chile, I went down into one of the slum areas with a DDT dusting team. This was an area of squatters, living in shacks built on bare ground from whatever pieces of wood or metal could be fastened together, not too dissimiliar from those that you and I as children built in our back yards. Here were thousands of people crowded together with the most primitive of sanitary facilities, and absence of bathing facilities, and experiencing infant and tuberculosis mortality rates that we would have considered shocking even a half-century ago. A few years earlier, whenever typhus appeared in such an area, it was a signal for the people to scatter and disappear before the arrival of the disinfesting team, referred to in nonloving terms as "the dog catchers." Today, as we stood there, I saw children tugging at the dress of the public health nurse to make certain that each got his share of powder in the hair or up the sleeves or down the back of the neck. I saw mothers bringing to the dusting parties every conceivable piece of cloth in their scant possessions. We were welcome, not feared. We were friends, not foes. The difference was one not only of methods (for methods had improved) but rather of understanding. It is true that no one in the group had ever heard of rickettsiae; none had heard of Pediculus humanus; few knew the relationship between lice and typhus, but all had come to learn that the health department was in reality their friend. All had come to learn that this dusting added not only to their comfort but also to their well-being and was, therefore, something desirable, not to be feared or resisted. The education might be of a low level but it was fundamental and based upon an acceptance of a very simple idea, an idea that could be accepted not on theoretical grounds but on the basis of actual demonstration as to its value.

I have often thought also of the two girls I saw sitting one winter day on the edge of a public fountain in Santiago. The temperature was in the upper 30's or lower 40's. Here were two girls, one about six or seven, her older sister fourteen or fifteen, perched on the edge of the fountain and dangling their feet in the icy water; the older one rubbing her legs to get them clean and scrubbing the legs of her younger sister. When I returned to my hotel room, which was not too warm, and warmed myself in a tub of hot water, I could not help reflecting as to what entitled me to such luxury —which was completely unknown to these two youngsters who probably never had enjoyed the luxury of a hot soak, and I wondered to what extent my technical and scientific education would have impelled me to seek cleanliness at the expense of the cold and chilling waters of that fountain. What I had observed was the effect of education, for obviously these youngsters had an appreciation of cleanliness and were seeking it even at the price of physical discomfort. For some reason or other, service to these had not kept up with demand and understanding but I had seen evidence that a service in the form of bathing facilities available to these youngsters would have been utilized, because deeply ingrained within them was a basic understanding that cleanliness was something so good and so desirable that it should be achieved even at the price of inconvenience and discomfort.

As I have had the opportunity to observe public health services in many countries of the world and to read about others in distant lands, I have become increasingly conscious of the fact that

fundamental to all of these is the problem of education. We must have education at a high level for those who are to appropriate the money for the support of services; we must have education at the technical level for those who are to render the services. Equally important, we must have education of the people who are to receive the services, for without health education of the public our efforts are bound to fail and the vast sums made available for the provision of these services will go for naught.

A third approach to the solution of any health problem is education alone, for there are many types of problems which cannot be solved by regulation or by service but only through the understanding of the people as to the conduct of their personal lives. It would be simple for a government to pass a regulation that every family must buy so much milk in the course of a day or to provide a service whereby every household is furnished a certain amount of milk, but there is no regulation that can be passed to force a mother to feed the milk to her child or that will compel the child to swallow the milk that is put in front of it. We might conceivably pass a regulation that every woman who becomes pregnant shall report her condition to a governmental agency and even prescribe that she shall see the physician or visit a clinic a requisite number of times during the pregnancy, but there is no way in which any regulation can be enforced or no clinic to provide a service that will compel that mother to recognize the significance of the early signs of toxemia. We may provide for reporting of cancer and establish clinics for diagnosis but there is no way of compelling the individual to recognize the vague symptoms which may lead to the early diagnosis of a cancerous growth. It is only through education of the public as to their habits of life and their personal conduct that we are going to make an approach to some of the most fundamental of our present-day public health problems. It is only through personal understanding that the individual can make the mental adjustment to present-day tensions which is essential to good mental health. It is only through personal understanding and individual adjustments that we may hope to make any approach to population control which, for many parts of the world, looms as the most serious problem as some of the major causes of death are removed and population expands at increasingly rapid rates.

From what I have said, it is clear I feel strongly that as we discuss world health and recognize that we are dealing with one world, in which the health problems of one nation become the concern of others, we must build our programs fundamentally on education. Regulation alone will not suffice nor will expanded and lavish programs of service, for it is only through education that regulation will be accepted or service utilized. We are thus faced with a tremendous problem of health education which is the concern of each and every one of us.

As we approach this problem, however, we must remember that knowledge is not the sole property of any one nation or even group of nations. We must recognize that just as problems differ from one part of the world to another, so also do cultures. We must recognize the solution that is best suited for one country may be completely inappropriate for another. I have heard a great deal in recent years about community development as though this were some miraculous discovery of the midtwentieth century. I have heard a great deal about community organization and a great many phrases such as "group dynamics," "inter-personal relationships," and the like. One of our students who had spent many years as a medical missionary in New Guinea re-

marked at the end of the year that she had heard many new phrases and terms, but they all described something that she had seen going on within the savage villages of New Guinea where a pattern of community organization had developed in complete absence of psychological theories and educational jargon.

I have been and am deeply concerned with respect to some of our educational programs lest in our enthusiasm measures, which we describe in ever-changing polysyllabic terms, be thought of as something peculiar to our civilization and a sine qua non to effective health education. I am worried lest we fail to recognize that even in the more primitive societies there is a cultural pattern within which any education must be developed. I have little sympathy for a program of health education which demands that people change their pattern of community life, that they alter their culture, that they accept behavioral patterns so contrary to their background. We must accept the fact that for reasons not immediately clear to us these peoples in various parts of the world have evolved a philosophy of life and a pattern of behavior dependent upon their backgrounds, a pattern that may well be best suited to their needs and far better than anything you or I can impose upon them. If we are going to develop and achieve sound world-wide health education, it is essential that in each country the program be adapted to the mores, to the customs, to the culture of these people. It is essential that we avoid the temptation to try to superimpose upon them something that appears to be useful simply because we have found it to be good.

During the past two days here at Atlantic City we have brought together representatives from over twenty nations of this world. We have in this, as in other meetings, discussed some of the problems of world health and we have talked in terms of one world, one health for all mankind. In a couple of days we shall be breaking up. We will scatter to our respective communities and return to our allotted tasks, each, I hope, somewhat better imbued with our sense of responsibility for the health of one world but each of us, with due humility, carrying with him the message of the memorable poem of Kipling:

"The tumult and the shouting dies;
The Captains and the Kings depart:
Still stands Thine ancient sacrifice,
An humble and a contrite heart.
Lord God of Hosts, be with us yet,
Lest we forget—lest we forget!"

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Action to deal with chronic disease is not new to public health. Tuberculosis, syphilis, and others are evidence of this fact. The newer programs concerned with chronic disease may be seen in many ways as extensions of older and well-established forms of action. The author of this paper supports his argument with examples.

THE HEALTH DEPARTMENT'S RESPONSIBILITY IN CHRONIC DISEASE PROGRAMS

Paul Q. Peterson, M.D., M.P.H., F.A.P.H.A.

THERE ARE many people working in the field of public health who seem to think that public health programs in chronic disease are something novel. Of course, some of the chronic diseases and conditions for which programs are now being developed are new to public health agencies. However, the fact of the matter is that provision of service for long-term illness and noninfectious disease services has been an integral function of most health departments for a long time.

Among traditional infectious disease programs tuberculosis and syphilis control have occupied positions of major interest for many years and these programs have been accepted as proper public health services. Leprosy and malaria likewise are chronic diseases for the control of which public health organizations in this country have assumed leadership and responsibility. Furthermore, state and local health departments traditionally have devoted a substantial share of their efforts to noninfectious chronic disease control activities, such as maternal and child health and dental health programs.

These points are made in order to dispel any thoughts that my discussion represents a radically new public health program interest. As examples of program components are cited, you will recognize old, familiar and established technics. The only new aspects are the specific procedures necessary for detecting a particular disease or condition. For instance, screening for tuberculosis depends on tuberculin testing, photofluorograms, and 14" x 17" chest plates; syphilis screening requires serologic tests; whereas in chronic disease screening programs blood sugar tests are used in diabetes, tonometry in glaucoma, and cytologic examination for cancer. However, administration and management, patient follow-up and referral procedures are the same and require the same skills and attention to detail, whether referral is for tuberculosis or for diabetes.

Patient education in chronic disease is based on the same program concepts as patient education in maternal and infant health or in acute communicable disease. Perhaps chronic disease patient education, at least in diabetes, has gone further in recommending group teaching.[1] However, this technic was borrowed from successful prenatal

classes and food handler courses. If we look at patient services in chronic disease we again find old, "tried-and-true" program methods. Home delivery services of 15-20 years ago, dental health services, crippled children's programs, visiting nurse bedside care—activities all so familiar to public health—require the same professional and administrative skills as medical restorative services for the cerebrovascular accident patient, the arthritic or the disabled aged. The social casework, nursing, and medical needs of the chronically ill patient receiving organized home care are no different than these same services marshalled to care for the acute poliomyelitis patient and his family.

Here, then, are the four cornerstones upon which chronic disease programs are built: case-finding, follow-up, patient education, and patient services. These are program technics that have long been identified with public health practice and their effectiveness has been well demonstrated.

In the face of this evidence one may ask: How does it happen that the impression is so widely accepted that chronic disease control is a new concept and program in public health? Here are some of the reasons:

1. It is obvious to the most casual observer that the range of disease entities included in today's chronic disease programs has expanded quite rapidly. In addition, both the number of diseases or conditions and their prevalence will undoubtedly increase. Cancer, heart disease, diabetes, glaucoma, arthritis, and rheumatism are some of the conditions that today are causing overwhelming mortality and morbidity as our population continues to grow and life expectancy increases. Further, the etiology of these diseases is complicated. Some of them are transmitted as a genetic recessive susceptibility and others are related to environmental factors such as the food we eat and the tensions under which we live.[2] No one would gainsay that these are new, substantial problems in preventive medicine.

2. The preventive medical concept on which chronic disease programs are built is basically that of secondary prevention.[3] This does represent a departure from the traditional public health program objectives which, in general, have been primary prevention and the ultimate eradication of a disease as a public health problem. Dedication to this concept has been singularly successful and has brought organized public health work to its present place of esteem in public and professional circles. Secondary prevention without the hope of primary prevention, then, is a new program concept which the chronic disease problem requires us to use in planning and application.

3. Public health agencies are becoming aware of the fact that chronic disease programs require a broader base of professional participation and reorientation of staff relations. Long-term illness and its attendant disabilities can best be handled when a constellation of professional services and facilities are brought to bear by a well organized staff.[4] Medical-social casework and physical therapy loom large along with the traditional services of public health and bedside nursing, and nutrition. Laboratories must offer additional services such as blood sugar analysis and cytology in addition to basic bacterial and viral work. Community service agencies and facilities for intermediate and long-term patient care are important to chronic disease programming.

This short list serves to point out what I believe accounts for the feeling of insecurity concerning chronic disease programs presently being voiced by many both in public health and private medicine. This results from: (a) recognition of the gross size of the problem and its complexity; (b) difficulty in accepting the concept of secondary prevention

without hope of primary prevention; and (c) resistance to redirection of standard procedures and staff assignments, and the inclusion of new technics in program activities.

Recognition of these basic factors may obviate the wasting of time and effort now being lost through "shadow-boxing" with such statements as: "Public health is supposed to deal only with communicable disease problems"; or, "Public health does not have the professionally trained staff to do chronic disease programs"; or, "Public health does not have the experience, facilities, or budget to do these programs." These are not realistic justifications for inaction. The legal authority delegated to health departments is to protect the public health; it is not limited only to controlling infectious diseases.[5] Health departments have been doing chronic disease work and do have experience in the field. We admit not being satisfied with our professional knowledge and therefore we are engaged in extensive training programs. No one agency has enough staff and money to do the job alone. Working together something can be started, but I believe without public health leadership and support no community chronic disease program can achieve adequate objectives.

Rather than discuss chronic disease program content in the abstract, I should like now to present a short description of several programs as examples of successful chronic disease efforts.

1. Mass Diabetes Screening and Multiple Screening—In Washington, D. C., the Health Department houses in its Upshur Street Health Center a chronic disease detection program which includes the following: Cornell Medical Index questionnaire, serologic test for syphilis, blood sugar test (Wilkerson-Heftmann), white blood cell count, hemoglobin, urinalysis, cervical cytology, proctoscopic examination, electrocardiograph, and 14" x 17" chest x-ray. The complete screening program is given to 10 to 12 persons a day. Of the 5,000 persons screened from April, 1955, to June, 1958, only a very small percentage presented no significant finding. Of the 1,400 persons screened for glaucoma, approximately 3 per cent showed abnormality requiring ophthalmological examination.

Besides doing multiple screening the department has continuously carried on mass blood testing for diabetes. From February, 1955, through June, 1958, 96,366 persons were given blood sugar tests at 130 mgm true glucose and 3,220 of them screened positive; 2,675 of these received follow-up and 1,111 were diagnosed as diabetic. The diagnosed diabetics represent 1.17 per cent of the total population screened. A case register of all diagnosed cases of diabetes is maintained and the Nursing Bureau of the department does a follow-up every six months in order to assure the maintenance of medical supervision.[6]

2. Mobile Chronic Disease Case-Finding—A case-finding program designed to meet an entirely different set of circumstances is the "Arizona Multiphasic Screening Program." The object is to screen groups in population centers, such as state and county fairs, by means of a mobile unit. Tests offered are minifilm of the chest, serologic test for syphilis, blood sugar, and measurement of intraocular tension. Two bus units house the operation, one a standard x-ray bus and the other a laboratory trailer where serologic tests and blood sugars are run and tonometry performed. A staff of eight operate the unit and include x-ray and laboratory technicians, project director, and clerk. Volunteer workers include registration and traffic clerks and the ophthalmologists who perform the tonometry.

From October 1, 1957, to May 4, 1958, there were 9,889 chest minifilms which resulted in 23 new diagnosed cases of tuberculosis. A total of 12,135

blood sugar tests taken resulted in the diagnosis of 63 previously unknown cases of diabetes, with "no report received" on 38 positive screenees. An Indian survey done May 30-July 6, 1958, uncovered 22 previously unknown cases of diabetes out of a total of 2,141 screened. A pilot project was conducted for glaucoma. There were 1,261 tests resulting in the detection of 11 previously unknown cases of glaucoma.

The multiphasic screening program for 1958-1959 already includes eight scheduled locations and negotiations are being completed for a number of additional projects.[7]

3. Restorative Services Program—The New Jersey State Health Department's Division of Chronic Illness provides two county hospitals with grants-in-aid funds for the employment of physical therapists, occupational therapists, and medical-social coordinators to develop and staff a restorative treatment unit. Equipment is also placed in these hospitals on a loan basis to strengthen their diagnostic and treatment facilities. Professional and technical consultation is provided on a regular basis from the State Health Department.

An outstanding feature of this project is the team approach (physiatrist, medical-social worker, physical therapist, and occupational therapist) used in the preadmission evaluation to assess the patient's motivation as well as his physical capacity to achieve a restorative potential. This approach is also used in all treatment and in periodic reevaluation conferences.

A completed study of 188 admissions to one project in Essex County during the period from May, 1955, to January, 1958, revealed: (1) the majority of patients improved under intensive medical rehabilitation services; (2) many of the patients when discharged were able to return to the community instead of to the institution from which they were admitted; and (3) potential savings of $400,000 have been estimated because of the reduction in cost of their maintenance.[8]

4. Home Care Program—In the Hartford, Conn., Home Care Program, the Health Department is the medical coordinator. Services needed by patients are purchased from existing agencies in the community. The greater Hartford Community Council acts as custodian of the project funds, which are derived from local official and voluntary sources and supplemented by State Department of Health subsidy, and coordinates all of the nonmedical community aspects.

Since the Health Department acts as the medical coordinator, the private physicians have not expressed any concern about losing the patients they refer for home care services. Referrals are also received from the hospital and other health and welfare agencies. The projected annual cost of the program is $45,000 for 100 patients. Features of this program are: (1) all referrals of prospective patients are made to the Health Department; and (2) the Health Department serves as medical coordinator utilizing a full-time physician for this project.[9]

5. Nutritionists Working in Nursing Home Programs—One of the newer emphases in public health nutrition programs is on assisting nursing home administrators to improve nutrition practices in the homes by providing resource materials, educational programs, and consultation to the licensing agency staff and nursing home administrators.

Recognizing that lack of information about the actual food service practices in nursing homes was an obstacle to planning realistic educational programs, the Milwaukee City Health Department has just completed a study to determine whether nursing homes are purchasing sufficient quantities of foods to meet the nutritional needs of clients. Food consumption of selected patients was also studied.

Food purchase and inventory records indicated that in nearly all homes adequate sources of all nutrients studied were utilized during the week of the study, except that in nearly 50 per cent of the homes insufficient quantities of vitamin C-rich foods were purchased. However, food consumption practices of selected patients showed that in addition to vitamin C, intakes of vitamin A, protein and calcium failed to meet National Research Council Recommended Dietary Allowances.

Other significant findings related to food service were the long-time interval between supper and breakfast, unsanitary food-handling technics, poorly planned menus and unattractive meal service, as well as failure to provide therapeutic diets as ordered.

Information gained from this study pointed the way to areas needing emphasis in nutrition work with nursing homes and resulted in the Health Department's establishing a nutrition course for administrators prior to licensure.[10]

The Florida State Board of Health and the Michigan State Department of Health have recently developed food service manuals directed to the needs of nursing homes. These booklets provide a wealth of resource material and can be the basis for a variety of educational activities with administrators and the licensing staff.

There are two additional program elements of such importance that I wish to call attention to them. The first of these is health education. All of us have recognized the necessity for exploiting health education in community organization for case finding and in patient education activities. In addition to such specific program responsibility, the health educator must guide the development of the general health education effort. However, there are program areas in which fullest exploitation seems to be neglected. For example, there is a correlation between obesity and diabetes,[11] between obesity and longevity,[12] and probably between obesity and coronary heart disease.[13] We are also aware of the fact that evidence points to a relationship between lung cancer and cigarette smoking.[14] A well conceived and organized health education program, intelligently and energetically pursued, is probably our most effective tool in such a situation.

The second special item is research. There has been a substantial amount of work done in basic research on chronic diseases. Out of this work have come better diagnostic technics, more intelligent therapeutic schedules, and greater understanding of the fundamental disease process which takes place. Such work must be continued. However, there is very little research in the epidemiology of these diseases. Epidemiology is uniquely a public health tool and without the knowledge of the natural history of disease our programming is incomplete. Another similar research need is in administration and program methodology. It is my personal belief that no one can do epidemiological and program research as well as public health agencies. Yet I find very few health departments exploiting their opportunities to engage in these types of applied research.

In conclusion, the purpose of this paper is to point out that chronic disease programs are not new to public health. They have been a part of public health activity for many years in programs such as maternal and child health, tuberculosis, syphilis, and so forth. Many of the staff skills and program technics are traditional to public health. Along with this it has been shown that present-day chronic disease programming presents new preventive medical concepts, procedures and problems, including size and complexity, secondary prevention without hope of primary prevention, and resistance to redirection of standard pro-

cedures and staff assignments. Examples of successful programs were presented as prototypes. And, lastly, two program activities (health education and operational research), which it appears to me are being neglected, were pointed out.

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Continuing Education: Nutrition

The second "Better Foods for Better Nutrition Conference," a joint conference sponsored by the Divisions of Foods and Nutrition and Food Processing of the University of Georgia, will be held March 3-4, 1960, at the university's Center for Continuing Education.

Curriculum topics include: Food Selection Outside the Home, Why Fortify Foods, Foods for Shelter Storage, Telling the Story of Better Foods for Better Nutrition, and Changes in Food Habits and Their Effects on Nutritional Status. Special attention will be given to industrial and institutional problems in processing, handling, and serving foods.

Further information from Dr. J. J. Powers, Department of Food Technology, College of Agriculture, University of Georgia, Athens, Ga.

The Disability Program of OASI has now been in operation for several years. How this program is operated, what are its achievements and lacks—these are the themes of the following presentations. As one reads, one cannot help but consider what this implies for the future.

THE OLD-AGE AND SURVIVORS INSURANCE DISABILITY PROGRAM: WHAT DISABILITY BENEFITS MEAN TO PEOPLE

Arthur E. Hess

WHEN ECONOMIC AND SOCIAL well-being are viewed as inseparable from physical well-being, the fact that nearly 300,000 disabled persons* are receiving the new Social Security disability payments has broad implications for health. However, the effectiveness of benefits to meet general basic needs depends in large part on the extent to which the community provides needed health and related services. OASI disability benefits are most adequate where the individual does not have to incur sizable expenditures for personal care, when through restorative and related services he has attained his highest capacity for self-help and self-care.

Under our governmental system, state and local units are primarily responsible for direct services to the disabled, sometimes with the help of federal funds. Many voluntary agencies and organizations also provide such services. The fact that OASI does not provide direct services to help its claimants meet problems of social and economic adjustment makes us no less conscious of their need. Indeed, the administration of a disability insurance benefits program has made us more than ever aware of the importance of community health and related services to the well-being of the claimants.

Our research and working relationships with others are directed, therefore, toward coordinating our activities with service programs in areas of mutual concern. We have started down this pathway so recently that many areas exist where many of us in OASI have scarcely come into contact with those who are working in the fields of services. Through the American Public Health Association I would like to explore our mutual problems and interests. However, before moving to such a discussion, I shall briefly review the OASI definition of disability, and the organization and procedures which govern the disability process. Other details about the provisions of the law and selected data on the characteristics of disability applicants are available in the booklet "Facts and Figures" prepared for this occasion.

OASI Concept of Disability

Under the OASI program, disability protection is limited to those meeting a rather rigorous statutory definition,

* As of October, 1958.

namely, "inability to engage in any substantial gainful activity by reason of any medically determinable physical or mental impairment which can be expected to result in death or to be of long-continued and indefinite duration."

There are four factors in the definition. First, the disability must be the kind of physical or mental condition which can be objectively determined by medical examinations or tests. The extent of damage or deterioration in physical or mental functions is of preponderant importance.

Second, the disability must be the primary cause of the individual's inability to work.

Third, the inability to work refers to any substantial work, not merely the kind of work the applicant last engaged in or the kind for which he is most obviously suited. Thus, an individual who has been advised to give up his particular kind of work in order to make his medical treatment more effective or who finds he is no longer able to meet the physical or mental demands of a particular job, may not necessarily be eligible under the OASI definition. This approach to disability is considered by many to be quite demanding.

Fourth, the disability must result from a condition which has persisted, despite therapy, for at least six months and which can reasonably be expected to continue for an indefinite time. The phrase "of long-continued and indefinite duration" applies to the medical condition; hence, it is not inconsistent with efforts toward rehabilitation.

At least six months must elapse between the onset of disability and the first month of disability payments. This "waiting period" is intended in part to avoid interprogram problems of benefit relationships during a period when employer sick-leave plans, voluntary insurance, and temporary disability insurance benefits are payable. Also, at the end of six months, most temporary ailments or acute conditions are either cured, or they are stabilized to the point where the severity and expected duration of the condition can be more readily assessed.

How a Disability Claim Is Processed

Applications under the Social Security disability provisions are taken by the national network of 584 Social Security district offices. The disabled person must furnish, at his own expense, sufficient medical evidence to show that he is apparently "disabled" within the meaning of the Social Security law. To assist him, the Social Security district office supplies each claimant with copies of a medical report form, to be filled out by his attending physician, and may request similar reports from a hospital or institution where he has received treatment for his disabling condition.

After the medical evidence has been received, the claimant's case is transferred to the agency of his state—usually a state vocational rehabilitation agency, under contract with our department, to make disability determinations for residents of its own state.

The evaluation of disability is made by a "review team" in the state agency. There are at least two professional people on each team, the number of teams in a state dependent upon the volume of claims. One of the two members is a doctor of medicine (often a physician in private practice, who serves with the state agency on a part-time basis).

Where the medical evidence initially submitted indicates a reasonable likelihood that the applicant is disabled, but more precise clinical or laboratory findings are needed to arrive at a sound decision or to resolve conflicts in the evidence, the state agency may arrange and pay for a consultative examination to obtain the additional information. In about one out of every five cases a consultative examination is necessary to

arrive at the decision. Ninety-eight per cent of these examinations are obtained from specialists. Selection of consulting physicians and payment of fees are governed by state practices.

State determinations are reviewed by the Division of Disability Operations of the Bureau of Old-Age and Survivors Insurance. The bureau may reverse a state finding that disability exists, or it may shorten the period of disability found by the state agency. It cannot, however, reverse a finding that no disability exists, nor can it establish an earlier onset date of disability than that found by the state agency. The law, however, gives a claimant who is dissatisfied with the decision in his case the right of administrative and court appeal.

In effect, the state agency acts as an agent for the secretary of the Department of Health, Education, and Welfare. There are obvious problems of coordination and consistency of decisions inherent in an arrangement under which agencies in each state participate so directly in the administration of a strictly national program and, as one might expect, the federal agency and the state agencies have had many operating problems to work out together.

Medical Relationships

There is, I know, a keen awareness among members of the Medical Care Section that medical relationships are an essential factor to the effective operation of a disability program. We have worked diligently to assure that policies and procedures are sound, not only from the social and administrative points of view, but also from the medical standpoint.

This concern led to the early appointment by the Social Security Administration of a Medical Advisory Committee, drawn from medical and allied professions outside the government. The experience and judgment of this committee has been of inestimable help in the development and the refinement of policies which may have connotations for the medical profession, as well as in the explanation of our methods and objectives to the profession.

One area of endeavor in which we were greatly assisted by this committee was the development and issuance of evaluation guides* for the use of technical and professional personnel on our staff and in the cooperating state agencies.

The guides indicate areas in which clear-cut allowances may be made with a minimum development of related factors. For every determination all the pertinent circumstances, both medical and nonmedical, are taken into account. The decisions often require the exercise of fine professional judgment.

As a rule, one would expect the kinds of medical facts that the attending physician needs in making his diagnosis and in treating his patient to be the same as those required in evaluating the severity of impairments in disability programs. However, key clinical information highly significant in disability evaluation is not always presented—perhaps because it was not central to medical management of the case. We are today engaged in a broad program to educate—if I may use the term—

* The Medical Advisory Committee recommended that the medical criteria be classified as confidential and restricted since the criteria, by themselves, are inadequate to communicate fully the bases for decisions. Accordingly, they are not available to medical sources that supply the clinical evidence or to the general public. However, the guides are reflected in published regulations which appeared in the Journal of the American Medical Association, September 28, 1957.

Some doctors, hospitals, and key individuals in labor unions and veteran organizations have expressed interest in the methods used to evaluate disability. We have, therefore, published an evaluation handbook which discusses our methods of disability evaluation and the type and kind of evidence that would best support an application for disability benefits.

attending physicians in the concept that evaluating the effect of an impairment on the individual's ability to work requires the kind of medical evidence that confirms diagnosis and measures remaining functional capacities of mind and body. By furnishing complete and factual clinical evidence, the reporting physician will make it unnecesary for the reviewing physician to "write back" for additional clinical or laboratory data.

Some patients as well as some doctors misconstrue the role of the practicing physician in the disability determination. Although his opinion is highly regarded, the attending doctor is not asked to certify that his patient is under a "disability."* Some doctors, however, append to their reports conclusions, e.g., "my patient is permanently and totally disabled. I have advised him not to work." If the patient is later denied benefits, the doctor often feels that his medical judgment has been impugned. It goes without saying that, unless supported by clinical and laboratory findings, a doctor's conclusions are not a sufficient basis on which one can make a determination within the meaning of the law. Through our informational campaigns, we are trying to get this point across to physicians and the public. Unfortunately, there have been some programs in which incapacity has been evaluated on just such conclusions without requiring detailed documentation. Of course, in the management of a condition, the doctor faces different problems than we do in the evaluation of total disability. The doctor must sometime advise his patient to stop working, temporarily or indefinitely, in the light of what he knows about the patient's occupation and its effect on his health. In doing this, he may not always consider the possibility that the patient can do some substantial work of a type different from his customary employment. Or he may feel that, realistically, the individual's circumstances do not warrant such advice. The considerations governing the decision as to whether an individual shall stop working for reasons of health are not always foursquare with considerations determining whether he shall receive a social benefit in lieu of work. Attending physicians should guard against being personally involved in the effort to rationalize or conform these two sets of considerations.

* The OASI position that certification of disability is an administrative function is consistent with the approach of the American Medical Association ad hoc Committee on Medical Rating of Physical Impairment, viz., "Evaluation (Rating) of permanent disability . . . is an administrative, not medical, responsibility . . ." (Preface, Special Edition, Journal of the American Medical Association, February 15, 1958.)

Vocational Rehabilitation

While OASI has as its central function the payment of benefits, income maintenance must be matched by positive efforts in helping the disabled again become contributing members of the community. An important feature of the law is the requirement that all applicants be referred for state vocational rehabilitation services. Accordingly, every disability applicant is told about the possibility of vocational rehabilitation. All medical and other information in the claims file of any disability applicant may be used by the state rehabilitation agency in considering him for services and placement.

Despite the many steps taken by the states and the federal government in recent years to expand and greatly increase the effectiveness of state VR programs, facilities are still quite limited in some areas. Unfortunately, the influx of over one million OASI disability claims, over a period of a few years, did not permit many rehabilitation agencies to screen and give the careful consideration to each individual case that might have been possible under more normal conditions.

The rehabilitation potential of two classes of OASI disability applicants requires further research and analysis: the first class consists of applicants whose claim for benefits has been allowed and for whom the Social Security law contains special benefit provisions in case the individual returns to work pursuant to a rehabilitation plan; the second class consists of applicants who are denied a Social Security benefit.

As a practical matter, only a very small fraction of the first group—those whose conditions have been found severe enough to meet the OASI test of "disability"—appear to have a realistic vocational potential. Many are older workers with progressively deteriorating conditions unlikely to respond to therapeutic measures; many are under constant medical attention; others have insufficient vitality to hold jobs in competition with others, or they are in too much pain to work regularly. Preliminary data indicate that approximately 6-7 per cent of those who qualify as "disabled" have been accepted for services by state VR agencies. In most instances the cases have not yet been reported as closed, so final results are not known.

If physical capacities were the only limiting factor or single consideration, then it would appear that OASI "denials" (those found to have enough residual capacity to do some kind of gainful work) are the best prospects for rehabilitation and could be most readily reabsorbed into the industrial life of their communities. However, even here the cards are stacked against success. In addition to the claimant's physical and mental limitations, the VR assessment of the individual for work must take into account the employment opportunities in the community and the agency's local facilities. Since VR resources are limited, that agency, quite naturally, devotes most of its efforts to the best employment prospects.

Moreover, handicapped workers do not enjoy the same breadth of employment opportunities as other persons. Many employers react unfavorably to them, especially toward those whose handicaps fall within the large groups of cardiac, respiratory and arthritic diseases. The handicapped worker often finds that he must compete for available jobs with able-bodied persons of his own age and that the job may be marginal—relatively low pay, less desirable working conditions, little prestige value, and limited chances of promotion.

In all fairness to employers (who, for the most part, recognize the valid social need, but whose paramount concern is what the job candidate can contribute to the successful functioning of the company), it must be admitted that denied applicants, as a group, have some characteristics which militate against their re-employment. For example, they are on the average 59 years old; an age when even the nonhandicapped worker has difficulty in getting a job. When, in addition, one considers the relatively poor state of their health, their lack of skills, their academic poverty, and the availability of able-bodied younger men, it must be admitted that even the OASI "denials" make unattractive employment prospects and hence difficult VR prospects.

Here is a dilemma and a problem that cannot be simply left on the doorstep of the vocational rehabilitation programs. Whether these persons are to receive income support or productive employment is a national and a community problem. Functionally, these denied applicants are not so impaired that they can be found permanently and totally disabled by any strict definition; nevertheless, many of them do have slowly-worsening conditions and, while not yet vocationally helpless, are too ill to work efficiently and competitively at their usual occupations. Even when work to match their capabilities can be

found at a distance, it is often impracticable for the ailing individual to relocate.

The Community as the Spearhead for Action

New challenges must be met by new approaches if effective solutions are to be found. Alternative methods of community action need to be opened up through experimentation, research, and employer leadership, as well as through the professional disciplines represented in such associations as yours.

The increasing age of the work force, the prevalence of chronic illness and degenerative conditions implicit in that aging, require constructive provision at the local community level. Workers who are no longer able to perform their customary jobs or other laborious tasks are nonetheless enabled by dramatic advances in medicine to live on for many years within their limitations. Some still have a lot to contribute if they can be given opportunities for productive work on a part-time basis, or under sheltered or other special conditions. These special conditions may be hard to come by, but community efforts must go forward to open up opportunities of this kind.

The fact that the vast majority of persons denied OASI disability benefits are not accepted for VR services suggests also that perhaps new kinds of restorative services are needed in order to meet the problem. Those for whom remunerative work is not feasible may nonetheless profit from social or medical services that would make them better able to take care of themselves, and be less of a burden on their families and their communities. Indeed, this is true not only of the disabled person under age 65 but also of our aged beneficiaries.

If government, social service institutions, and industrial enterprise each sees the handicapped worker from a different angle of vision, and each (for reasons that are equally valid when viewed in the context of its own program objectives) rejects the individual for benefits, services, and work, we have, in effect, a "no man's land" populated by forgotten people. Since social attitudes are the vital determinant of public policy, society at large, and the community in particular, must lay this problem frankly on the table for discussion and joint action.

The community has the responsibility to see that these people utilize whatever capacity they have left—if not competitively, then in some noncompetitive, but significant manner. Vocational retraining and placement is undoubtedly the best answer and much more can, no doubt, be done in this regard. There are dramatic examples in all parts of the country of industries that have adjusted the requirements of specific jobs to the capacities of handicapped and aged persons. But when restoration to employment is impracticable, community health facilities and social services may be able to offer new ways of alleviating dependency and of making life more satisfying for these people.

No single agency, standing alone, can solve this problem. If the job is to be done, it requires joint effort in every level of government and the expansion and refocusing of community resources. Moreover, we must recognize that it may also require adjustment in the provisions of the public programs. In our own disability program, for example, we must see whether the law needs to be changed so as to provide a better incentive for the individual to try out his capacities without fearing the loss of benefit security.

Implications for Medical Practice and Medical Services

Although there are indications that medicine is shifting its focus, a great

deal of medical practice is still two dimensional (diagnosis and therapy). Preventive and rehabilitation medicine have yet to come into their own. Although rehabilitation medicine has made some progress in devising technics to measure a patient's ability or inability to perform useful functions, there have been few advances in this field in so far as neuropsychiatric impairments and debilitating diseases are concerned. This phase of medical practice merits the increased attention of the whole profession, including those of its members in the medical schools.

OASI, in cooperation with medical schools and rehabilitation centers, is planning research studies. For example, one study now under way, hopefully will provide simpler and more precise technics for testing cardiopulmonary function, which is significant for testing remaining capacity for work. If studies of this type help to develop new technics or refine present technics of disability evaluation, they should also have important implications for rehabilitation and health agencies.

OASI experience in uncovering disability cases which are medically untreated or which have not had the benefit of available health and social service may have important effects in the development of community programs of service. Of all the childhood disability cases allowed, two-thirds are mentally deficient and one-half have a mental age of less than eight. One out of ten is confined to an institution. The relationship between age and institutionalization is an inverse one.

If this decrease by ascending age groups in institutionalized children cannot be explained wholly by expansion of facilities for handicapped children in the last few decades, it may indicate the existence of mentally deficient older "children" who have been deliberately concealed from public notice because of the once-powerful social stigma attached to mental deficiency. The validity of this conjecture is to some extent borne out by the fact that our district offices have reported to us this past year that parents have filed claims on behalf of disabled adult "children" who were not known even to their closest neighbors. This information has implications for child-help organizations, particularly as to the need for developing community facilities that apply the newer insights into medical and social treatment of chronic disease.

The administration of the disability program will provide a wealth of clinically verified data previously unavailable to the health professions. OASI operations may also affect the maintenance of medical records. From now on a small but steady flow of patients will be asking their attending doctors to supply comprehensive and objective medical data concerning their conditions. The doctor with completely adequate clinical records will, of course, be in an excellent position to serve his patients' needs. The volume of "write backs" for additional medical information will undoubtedly serve as a constant reminder of the importance of adequate clinical records.

Conclusion

Public attitudes about disability have not kept pace with the giant strides of modern medical science. In the public mind, as in many programs, thinking about "disability" is not always governed by "medical determinability"; instead, economic and occupational factors such as the handicapped person's inability to do his customary job are often the decisive considerations.

In contrast, "medical determinability" is the keystone of the OASI disability program. Thus, under this program, handicapped persons who, in a clinical setting, may be said to have enough physiological or functional reserve to

perform work must be denied disability benefits.

An impasse arises, however, when the denied applicant moves from the clinic to the market place—to try to sell his remaining capacity for work! Prospective employers, all too often, reject him as "unemployable"; he has, they say, too little capacity for work left to regain his place in the industrial community.

How can we help the handicapped citizen denied disability benefits to escape his predicament? A two-pronged approach seems essential: (1) Expand medical and other resources, or marshal present resources in such a way that disabled citizens may receive more effectively at the community level the advantages of modern medicine and related services; and (2) stimulate employers, labor, and community agencies to explore new avenues of productive activity for those persons with limited work capacity.

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DISCUSSION

Jean Spencer Felton, M.D., F.A.P.H.A.

IN THE description of the Disability Insurance program, Mr. Hess has touched succinctly the wave crests of the program, without coursing into the details of the troughs. At the time of activation of these new Social Security amendments, there was resistance by physicians, but through the creation of the Medical Advisory Committee, their cooperation and guidance in planning were sought and utilized. In the first meetings of this committee, it was understood by all that the Congress passes the laws, and it is the function of the medical profession and others, whose functions relate to the amendments, to implement them in so far as they are concerned.

The Disability Freeze program and the more recent cash benefits features of the legislation, do not represent an unchecked, easy-to-become-a-member club. The physical standards established are rigid, were prepared carefully, and are rich in detail, so that an individual seeking these benefits must meet rigorous and demanding physical disability requirements.

The preparation of the reports requested by the applicants represented a new work load for physicians, and even now, many practitioners feel that it is incumbent upon them to evaluate the disability. This is not their required function. Apart from providing the report material for their patients, they

should explain to the applicants that the evaluation of permanent disability is an administrative responsibility, and not that of the physician who has been in attendance, or who currently is caring for the applicant. Through communications from the Bureau of Old Age and Survivors Insurance, physicians have been informed that it is to the applicant's advantage if complete evidence in support of a claim can be furnished, such as laboratory reports, x-ray interpretations, and other data, rather than a narrative review alone of the clinical condition.

Mr. Hess has stated, in commenting on the physician who has advised his patient to stop working, that he "may not always consider the possibility that the patient can do some substantial work, of a type different from his customary employment." It is true that work is soundly rehabilitative, but a change in occupation is not always accomplished with ease, either socially or emotionally. At times this process becomes a huge task in human retooling, for in a job move, one undergoes changes in skill usage. Further, if one believes at all in the analytic theory of occupational choice, one must determine that the new job answers the individual's unconscious needs and will be as satisfying as the former activity. The answer does not lie merely in the industrial or private physician's suggestion, or in the personnel director's recommendation that a disabled person be assigned alternative employment.

The reason for presenting these facets of the basic problem lies in the need for placement of a great number of persons not eligible for benefits, yet who, in a minor way, do have some incapacity. It is these rejectees whose skills must be developed, and probably a restorative program would represent a new way of life for them—living productively with a marginal physical deviation. Training and re-education must be carried out, and all facilities should be utilized, including those sheltered workshops which are available locally.

Social blocks appear when one attempts to move a disabled person to a work site distant from his home. Relocation is not feasible, when there are firm community establishments of other wage earners in the family constellation, so that efforts at full utilization of the partially impaired but benefits-disapproved applicant must be exercised at his home base.

It was mentioned by Mr. Hess that only 6 or 7 per cent of those who qualified as disabled were accepted for service by rehabilitation agencies. Why is the figure so low? These agencies, as we know, logically wish to invest their limited funds in the "best employment prospects," those most likely to be rehabilitated successfully and those whose projected or anticipated work life will be the longest. The counselor must be practical in his selection of a client for service, and it must be stated, in all fairness, that many of the denied applicants reviewed by the rehabilitation offices were not the most feasible for this kind of effort.

A further point needs emphasis in understanding the problem. The disabled, in spite of outstanding dedicated work by voluntary and official groups, still experience difficulty in obtaining employment. Confrontation of a prospective employer with all the data regarding their effectiveness does not increase the number hired.

Apparently the reason lies within the emotional sphere of the industrialist or the interviewer who, for one reason or another, feels uncomfortable in the presence of a person obviously physically limited. The discomfiture is covered and eliminated by a fallacious reason for rejecting the applicant; thus, this type of prejudicial act increases the number of those of physical variance needing work.

These are the practical difficulties which make realization of the initial goal of this new social legislation almost impossible. Will these disability insurance applicants—both those accepted and those denied—be rehabilitated? It was the intent of the amendments, but only time can demonstrate the completion of the mission.

Some lessons have been learned since this program has been effected. In many instances, the inadequacy seen is educational deprivation, and because of the person's lack of training, a minor physical disability appears to loom larger. Anyone who has any connection with children in a counseling capacity, certainly should, in all cases, encourage a youngster to remain in school as long as he possibly can, in order to minimize the job-negating effect of a minimal disability. Also, we must rid parents of their feelings of guilt for having given birth to physically handicapped children. It is mandatory that we re-educate parents so that the so-called "hidden children" can get care at a much earlier date, be it physical restoration or rehabilitation or complete training.

Next, it is essential that we teach, in our medical schools, the expectations in the future of complete documentary reporting on the part of physicians. As the third party enters more and more into programs of medical care, a greater number of physicians will be involved in submitting written reports on their patients. Some practitioners, because of an emotional response to this increased work load, might intentionally provide less than excellent transmission of information. Through an appropriate orientation in medical school, we feel that the young graduate will be better prepared for this segment of his practice.

The effective working of the Disability Freeze and Benefits Program, if it remains successful in the years to come, may bring about a change in workmen's compensation legislation, and eventually eliminate state by state variations. Complications and problems are legion in workmen's compensation. It is possible that this program, with its single set of standards for use by all states, as an example, might stimulate constructive thought toward retailoring the present workmen's compensation laws of the various states and produce uniformity in method of operation and interpretation.

It must be remembered, also, that disability is not static, and that different persons perform their work in response to varying motivations and needs for recognition, as well as a desire to identify with a worth-while activity. Each of us must produce and contribute to society and, even though an impairment might be present, this does not, in any sense, preclude a sharing of the world's work. Many a disabled person has lost the need for a great number of his symptoms when effectively engaged in productive work.

Concepts of disability appear in different contexts; the adjudication of injury is accomplished one way in personal injury suits, in another in combat injuries, and certainly a third way in insurance uprating, so that one cannot move from one area of injury judgment to another and use the same base lines of criteria. Disability is not solely a medical question, and all concerned with this must learn that our work is aimed toward a measure of the individual's residual functional capacities, not toward appraisal of his disability. The core of our current medical teaching, of course, is the understanding of the disease process, and measuring the functional capacity is somewhat contrary to this. Through good, comprehensive teaching in the schools of medicine, our graduates in the future may be more skilled in evaluative procedures of this kind.

Will disability increase? The frequency of automobile accidents is mounting, and the disability resulting

from industrial injuries will continue unless there is additional enabling legislation added to our workmen's compensation acts permitting rehabilitation, so that total recovery and not a partial regain of function will be the goal. If global war should come, we can anticipate more disabled people. Furthermore, a greater amount of disability will result from extension of the lives of brain damaged children. The increase in the number of aged persons will broaden the dimension of the problem, and whether we are professional or lay workers, these points comprise our mission: (1) If a person is truly disabled, his condition should be reported accurately and completely. (2) We should encourage people to work. (3) We should encourage employers to hire persons who are disabled.

The Disability Insurance program is here, and all of us should contribute to it our highest professional skill.

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DISCUSSION

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MR. HESS mentioned several areas in which the need for improved community services has been pin-pointed through the problems coming to light in the administration of the OASI disability program. These include the denied applicants, who are often poor prospects for either employment or vocational rehabilitation; the accepted applicants who are not found feasible for VR services, but who would benefit from medical or social services; and, I would add, a relatively small group of persons considered "rehabilitated" after receiving VR service, but faced with problems in obtaining and holding employment. Large numbers of these three groups, in their search for service or assistance, come to the attention of public welfare agencies.

In every county of our country the services of public welfare personnel are available. In many rural and semirural communities the public welfare department is the only social service agency, and even in those places where there are voluntary agencies, the public welfare office is frequently the place where people go first for information and advice. We have a long way to go in public welfare before fully meeting the objective we have set for ourselves—that of "assuring a minimum level of living, below which none need fall; extending social protection to those, like children or handicapped adults, requiring special

care because of their helplessness; and offering guidance and specialized service to those with problems which the community recognizes to be at once serious and beyond their immediate power of personal solution."[1] We are moving rapidly in this direction, however, and we look to the social insurance programs as a strong ally in fulfilling these aims.

Public welfare, perhaps more than any other group except labor, has pointed out the need for and strongly supported the extension of our social insurance system. Through this preferred means of income maintenance, we would like to work ourselves out of the job of giving public assistance. We know that probably this can never be fully accomplished since public assistance, even in a comprehensive and mature social insurance system, will be needed as a means of supplementing the basic insurance benefits and filling in the gaps in protection. We hope, however, that the assistance portion of the public welfare programs eventually will be reduced to a minimum and that welfare departments can truly become the community social service agencies needed throughout the country.

This objective will not be reached next year or the year after, but a backward look is sometimes surprising in terms of what has been accomplished. This is particularly true as we examine the development of income maintenance for the permanently and totally disabled workers in this country. Since the initial planning for the Social Security Act, there has been study of the need for disability protection. For many years this resulted in no action. In 1948, however, the Senate Committee on Finance appointed an Advisory Committee on Social Security. In its report the Advisory Committee recommended, along with other revisions in the social insurance and public welfare programs, extension of the social insurance system to afford protection against loss of income caused by disability. One of the other recommendations was for federal grants-in-aid for general assistance, the program in which there is no federal participation. Both proposals were in the bill drafted by the Senate Finance Committee but neither was effectively included in the final bill adopted by the Congress in 1950. Instead, in a partial attempt to meet some of the needs pointed out by the Advisory Committee in its recommendations for Disability Insurance and for federal grants-in-aid for general assistance, the compromise program of Disability Assistance was adopted.

This assistance program is now operative in almost all states. Like any assistance program, it has many built-in disadvantages. It does, however, fill a need in providing income for certain individuals who are not eligible for Disability Insurance and it supplements, in some instances, inadequate Disability Insurance benefits. Briefly, it differs from the Disability Insurance program in several ways.

1. The definition and interpretation of disability may vary from state to state. To illustrate this, I quote two definitions. The first, from a state in the southwestern part of the country, reads: "A person must be permanently and totally disabled by significant permanent physical or mental impairment, disease or loss precluding ability to be wage earner or homemaker. If disability is due to physical impairment, he must be unable without help to eat, dress, bathe or ambulate. If disability is due to mental impairment, he must require constant supervision and/or care by another person." A much more liberal approach to disability is illustrated by the definition established in a western state's disability assistance program which reads: "The person must have a permanent physical or mental impairment which is disabling and because of other factors (age, training, experience, social setting) substantially precludes the applicant from engaging in useful occupation as a homemaker or as a wage earner in employment which exists in the community and for which the individual has competence."

2. Disability Assistance differs from Dis-

ability Insurance because it is a program based on need. Therefore all resources, income, and employment must be considered. In addition, state law may establish other eligibility factors such as citizenship, residence, and responsibility of relatives to support.

3. The final and perhaps most interesting difference between the program of Aid to the Permanently and Totally Disabled and the Disability Insurance program is the way in which disability is determined. It is fair to say, I believe, that social factors are often given equal weight, in the assistance program, with medical findings and that while there must be a medical basis in the determination of disability, the social worker's report is often considered by the review team of physician and social worker to be as important as the physician's findings.

This assistance program was only four years old when, in 1954, Congress passed legislation establishing the Disability Freeze provisions of the social insurance system. From that time on progress has been relatively rapid in the improvement of the national program for income maintenance for disabled persons. In 1956, a further amendment to the Social Security Act provided for cash disability benefits. This year Congress passed amendments which provided for benefits to dependents of disabled workers (including wives, dependent husbands, and dependent children), an increase in the wage base and in benefits, elimination of the previous offset for other federal disability benefits, and other liberalizing amendments including those relating to retroactive payments. In general, the 1958 amendments, like the amendments in 1956, were initiated and developed by Congress without the official encouragement of the executive branch. In fact, with respect to certain amendments there was strong opposition from some highly placed administration officials.

Public welfare agencies have a good view, country-wide, of the positive and negative aspects of the Disability Insurance program. They are agreed that Disability Insurance and the Disability Freeze are well administered. They are further agreed, however, that problems do result from certain limitations in the law and from some of the interpretations of the law.

1. Public welfare officials were, of course, much concerned about the previous omission of benefits for dependents of disabled workers. Years ago we implemented the principle that the dependents of retired workers should be eligible for benefits. It has hardly seemed consistent, therefore, that the disabled worker and his family should not have the same protection. This has now been corrected.

2. The requirement that the disabled worker who is applying for disability benefits be fifty years or older creates considerable hardship. The younger disabled worker and his family are as needy as the older worker—sometimes more so—since he is likely to have young children and not to have had the opportunity to acquire substantial savings. Experience in the Disability Insurance and Freeze programs has now been sufficient so that an actuarially sound plan could be developed for eliminating the fifty-year requirement.

3. The provision of rehabilitation services for those Disability Insurance beneficiaries who can be expected to profit by them is economically and socially sound, and public welfare officials strongly support the provision of such services. We believe, however, that contributions toward the cost of such rehabilitation should be made from the Disability Insurance Trust Fund in those cases where it appears that a saving to the fund will result from the rehabilitation. In many states the appropriations for vocational rehabilitation programs are inadequate. Payment from the trust fund would make it possible for state vocational rehabilitation agencies to accept some of the more costly cases which now, in terms of priorities and most effective use of limited funds, may have to be refused service. There is a related problem with respect to the use of vocational rehabilitation services for these disabled beneficiaries. In many states the great volume of referrals—some of which are made only as a routine result of the legal requirement, and not because there is any real hope of rehabilitation—has burdened the state vocational rehabilitation agency with a great deal of paper work which interferes with the primary purpose of its program. There should be continued experimentation in ways of reducing such referrals to a level which will ultimately result in the greatest proportion of rehabilitated workers.

4. Temporary Disability Insurance is a great

need in almost all the states of this country. There is great difference in opinion as to whether this should be a state or federally administered program and similar questions may be raised about workmen's compensation. In public welfare we see the results of such omissions in our social insurance system, with the consequent result that temporarily disabled workers in most places must, if their own resources are exhausted, apply for public assistance.

5. We find that, although the benefit level is now somewhat improved in Disability Insurance as well as in Old Age and Survivors Insurance, there is still need, in many instances, for supplementation from public assistance. Usually, this is due to a need for general medical care, and in those states where the public assistance program is so limited either as to concept or by inadequate funds, that supplementation of income for medical care alone is not permissible, a serious hardship is experienced by the disabled worker and his family.

6. Many public welfare agencies raise questions about the severity of the disability evaluation standards established by the federal agency, even though these are consistent with the legal definition of disability. They point out, too, the impact of the nonmedical factors and believe that even more consideration should be given to these. They have found in their own programs of disability assistance that there is need for well-qualified interviewers who have been helped to understand the meaning of illness to people, and they believe that sometimes the OASI district office interview which is the preliminary step in applying for Disability Insurance, may not bring out all the related facts.

7. There is a continuing problem in the interpretation of differences in the definitions of "disability" in Disability Insurance, disability assistance, vocational rehabilitation, workmen's compensation, and other programs where disability is an eligibility factor. A recent news release from the Social Security Administration commented on the large number of appeals filed by persons seeking disability benefits; it mentioned that many of these individuals have impairments entitling them to pensions or compensation under other programs, which leads them to believe that for this reason they are also entitled to disability benefits under the Social Security program. The great number of such appeals has resulted in a delay in action and, even though in the case of a favorable decision payment may be retroactive, creates problems for many potential beneficiaries.

Much has been accomplished in ten years but gaps still need to be filled. It is to be expected that with continuing experience and the sound administration which the Bureau of Old-Age and Survivors Insurance has demonstrated, these further necessary steps will be taken. Whether this will be with the leadership of the federal administration, or whether again it will be through independent action by the Congress, spurred by the interest and support of labor and public welfare groups, cannot be said now.

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From time to time, it is necessary for a painter to step back from his easel and get an overview of his work. Such an overview is equally important for health workers, and here is one concerned with the large picture, on a world-wide basis, of health departments and medical care.

HEALTH DEPARTMENTS AND MEDICAL CARE— A WORLD SCANNING

Milton I. Roemer, M.D., M.P.H., F.A.P.H.A.

EVERY PUBLIC HEALTH worker knows how difficult it is to define the meaning and scope of functions of a health department in the United States—so different are activities among the states, counties, and cities. On a world scale, the problem of definition is obviously greater. For the sake of simplicity, and to provide a convenient basis for comparing administrative patterns in different countries, we may use "health department" to mean that agency of government which, among other things, is responsible for most organized preventive health services in a nation, province, or community. In addition, this agency may supervise or provide various segments of medical care for the population. This brief review describes the predominant forms of relationship between public health and medical care administration in different nations.

American Background

The issues that have confronted us in the United States as to the best pattern for administration of medical care are by no means unique, nor are they of recent vintage here. Current-day readers are doubtless familiar with the official statement of the American Public Health Association in 1944, advocating administration of any program of medical care for the general population by health departments. The basic argument was that administrative integration of preventive and curative services is desirable, and this could be better achieved under a unified health department rather than dual agency administration.[1]

Less well known, perhaps, is the fact that America's public health leaders advocated the closest possible connection between medical care and public health administration long before this. In 1916, the Conference of State and Territorial Health Authorities, meeting in Washington, D. C., adopted a report on "Health Insurance." This report advocated general medical care insurance for all employed persons earning less than a specified annual income. It favored the establishment of state funds from employee and employer contributions, but it criticized European health insurance programs because they did not provide for "correlating the system with existing health agencies." In contrast, this report recommended that in America:

"There must be close connection of the administration of any health insurance system

with the health agencies of the country and with the medical profession. It is believed that this can be done in three ways: (1) by providing efficient staffs of medical officers in Federal and State health departments to carry into effect the regulations issued by the central governing boards or commissions; (2) by providing a fair and sufficient incentive for the active cooperation of the medical profession; and (3) by providing for a close cooperation of the health insurance system with State, municipal, and local health departments and boards."[2]

Especially familiar to contemporary ears is the ring of a later paragraph which states:

"Health officials should realize now the necessity for correlating the administration of the medical benefits of any proposed health insurance system with existing health agencies. If health departments are at present inefficient, they should be strengthened and made adequate to meet all demands."

Despite these views, going back over forty years, health insurance programs developing in the United States have had little if any administrative connection with health departments. Even programs of medical care for the needy, workmen's compensation, medical care for veterans, the operation of hospitals for mental disorders, or other significant programs of medical care are generally not under health department jurisdiction. One may see a small trend toward increasing health department concern for medical care in the last 15 or 20 years, but the predominant pattern today remains one of divided rather than unified responsibilities for preventive and curative health service administration.[3]

World Perspective

A scanning of the administrative schemes in other countries may help to provide a better understanding of the pattern now found in the United States. For, if we take the world as our social laboratory, we can observe a range of differing patterns of health service organization, and the relationships of the health department to medical care can be defined more or less by the place of a country in this theoretical framework.

The health service programs of different countries can be characterized as falling into four principal types: (1) free enterprise; (2) social insurance; (3) public assistance; (4) universal service. Of course, no such classification can be made too rigid, for social phenomena are far too complex. In every country there are some elements of all four of these patterns of health service organization. In each country, however, one of the four predominates, while the others play a subordinate role.[4]

In the United States, the free enterprise pattern predominates, with the population receiving most of its health service under privately financed arrangements. We know how rapidly this is changing, with the great extension of voluntary insurance and public medical care programs, but as of 1958 these movements have not yet affected the lion's share of medical care costs or services. On the whole, Canada and Australia are likewise in the free enterprise group, although they are moving very rapidly toward the social insurance pattern. All three countries, it may be noted, are federations of states or provinces, comparatively wealthy, highly industrialized, relatively young and pioneering in character.

In these countries, the health department tends to concentrate heavily or exclusively on the administration of preventive services. Health insurance administration is mainly under voluntary societies, having little if any official connection with the health department. Even in Canada, where national hospital insurance legislation has recently taken effect, the provincial administration is predominantly under agencies other than the public health authority. The general hospitals are largely under the control of local voluntary groups. Health cen-

ters are interpreted mainly as buildings to house a health department, rather than places for ambulatory health care of the population. Programs of medical care for special diseases and selected population groups are usually administered by agencies separate from the health department, although there are important exceptions in some of the provinces and states. School health services are often under boards of education, rural health programs under agricultural agencies, industrial injury services under other auspices. Licensure of physicians and other health personnel is usually in the hands of semiautonomous professional bodies.

In western Continental Europe, the social insurance pattern of health service organization predominates. In France, Germany, the Benelux countries, Italy, and Scandinavia, most of the population receive the major part of their medical and hospital services through social insurance systems. In general, benefits are related to specific contributions. Of course, there are great differences among these systems in the methods of raising funds, population coverage, health benefits, ways of paying doctors, and in the patterns of administration. On the whole, however, physicians remain in private medical practice for ambulatory care and receive payments of fees directly or indirectly from the insurance funds. Hospitals, on the other hand, are predominantly governmental, under local or provincial authorities. Most medical practice in the hospitals is by salaried specialists, employed directly by the hospital administration. This general pattern is found also in Japan and Israel, countries highly influenced by European developments. (Israel is exceptional, however, with its salaried insurance doctors in health centers.) In Sweden and Norway, health insurance coverage has recently been extended to the entire population. Under these schemes the patient is indemnified for most, though not all, medical charges and certain benefits (e.g., drugs and dental care) are restricted.

Under the social insurance pattern, the health department has little connection with the administration of the health insurance funds. These are typically under hundreds of semi-independent organizations, developed on geographic, occupational, or religious lines. They are usually supervised by ministries of labor or social welfare, which also control old-age pensions and other aspects of social security. At the national level there may be an advisory service from the health ministry or department, but at the local level the health officer is seldom involved. It is noteworthy, perhaps, that many of the social insurance institutions have undertaken their own preventive service programs—even without health department ties—a trend reported as early as 1928 by Franz Goldmann and Alfred Grotjahn.[5] On the other hand, in Scandinavia, one sees salaried District Health Officers, responsible for public health administration, engaged in the provision of medical care to the rural population.

Hospitals, in general, come under much greater public health supervision in the social insurance than in the free enterprise countries. The health ministry, typically, has a major division for supervision of hospitals, the authority of which goes far beyond such measures as are embodied in the Hill-Burton construction program or the hospital licensure laws of the United States. Health officers at the provincial or district level are usually responsible for supervising the operation of all public hospitals in their territory, including standards of personnel and operation as well as construction. Medical and other types of professional licensure are also usually a health ministry function. The care of tuberculosis and mental disorders in special institutions is ordinarily assigned to branches of the national health depart-

ment, although the local health officer may not be involved. Health departments commonly have duties in legal or forensic medicine, especially in Central Europe. Medical inspection of factories, on the other hand, by reason of European political history is usually a function of separate officers of departments of labor.

There has been rapid movement since World War II, especially in the northern European countries, from a social insurance toward a universal service pattern of health care. Increasing shares of hospital service are financed from general revenues, rather than insurance funds; and even the insurance funds for ambulatory medical care receive increasingly larger subventions from general revenues, as coverage is extended to the entire population.

The third, or public assistance pattern of health service, is found principally in the great stretches of Asia, Africa, and most of Latin America, areas characterized as the economically underdeveloped parts of the world. Here the great majority of the population cannot afford to finance needed medical services either through insurance or private payments. They depend for the most part on services provided free by the government and financed from general revenues. Most of these services are given by salaried personnel working in hospitals, dispensaries, or health centers. Because of the prevailing shortage of doctors, extensive use is made of auxiliary personnel. In the large cities, private physicians and private hospitals are available for the relatively small upper and middle classes. A means test is theoretically applied to determine eligibility for public services, but since the vast majority of people are poor, eligibility is taken for granted in everyday life.

While the level of medical services in countries with the public assistance pattern is seriously impaired by the sheer poverty of these nations and their great shortages of personnel and facilities, the administrative pattern vests wide authority in the health department. Typically, the national health ministry is responsible for all curative as well as preventive services. Provincial and district health departments are usually responsible for all health services in their territory; they administer, rather than supervise, the hospitals and in health centers they provide ambulatory day-to-day medical care. The task for many of these health departments—in contrast to the American scene—is to give sufficient attention to the preventive services, so heavy are their responsibilities for medical care. To cope with special problems like malaria or tuberculosis control, the central government often organizes campaigns, in which the local health officer may be only indirectly involved. Since local government is usually weak, strong central control is the general rule.

In Latin America, largely under European influence, the health insurance idea has recently been spreading for certain groups of workers in industry, mining, or government. As in Europe, administration of these programs is, typically, by social security institutes, quite separate from the health ministries. Unlike Europe, however, and consistent with the over-all service patterns of the public assistance countries, physicians attend insurance beneficiaries, not in a private office, fee-for-service setting, but rather in organized clinics usually on part-time or full-time salaries. Most of the Latin-American populations are predominantly agricultural and, with the exception of Chile, are not covered by these insurance programs. In Chile, an estimated 70 per cent of the population is entitled to some form of prepaid medical care, and it is significant that a recent reorganization of the Chilean health system places practically all responsibilities under the health ministry and a network of zone health departments.

Finally, there is the universal service pattern of health organization found in the Soviet Union and other communist countries, Great Britain and New Zealand. In these countries, virtually complete medical care has been made a public benefit for all persons. Contrasted with the public assistance countries, there is no restriction of care to the poor, and the supply of personnel and facilities equals or exceeds that in the free enterprise or social insurance countries. In contrast to the latter, benefits are not related to contributions or payments. Almost all hospitals are owned and operated by the central government. Almost all personnel are under contractual arrangements with the government and paid through funds derived mainly from general revenues.

In the Soviet scheme, the health ministry has authority over all preventive and curative health services, supervising a hierarchy of administration at three other levels; the republic, the district, and the local area. The local health officer is responsible for all services in his area, including the management of hospitals and health centers. All personnel are on full-time salary. Hospitals are organized in functional regions, with referral of complex cases from peripheral to central facilities, as in the military hospitals of the United States. Unlike all three other country patterns, the manufacture of drugs and appliances is carried out directly by the national health ministry. Even the education of physicians, nurses, and auxiliary personnel has, since 1930, been a function of the health ministry through special institutes separate from the universities. These institutes also conduct all medical research.[6]

In Great Britain and New Zealand, while the impact of the national health services is as great or greater than in the Soviet Union, the assignment of authority to the health department is not so sweeping. At the national level, the authority for all public health as well as medical care—ambulatory and hospital—is, indeed, vested in the Ministry of Health. Social insurance for cash benefits is supervised by a ministry of labor or social welfare, but medical services have been separated from the other benefits and assigned with public health to the national health agency. Below the national level, however, concessions have been made to various interest groups. Hospitals and specialty services are administered by regional boards and ambulatory care, including the services of general practitioners, dentists, and drugs, by local executive councils—both of these bodies being responsible to the national Ministry of Health. Traditional preventive health services are provided by local health departments, along with certain auxiliary curative functions, such as the services of visiting nurses, home helpers, and ambulances. It is significant that one of the most pressing problems of the British National Health Service is the need for coordination of all these activities at the local level, for which the logical resource would be the local health department.

Comment

The ultimate test for the effective administration of health services is how it functions at the local community level, where the services reach the people. Even in the United States, with its free enterprise pattern, a great deal of coordination has occurred at the national level, through the Hoover Commission studies, the formation of a national Department of Health, Education, and Welfare; and in the voluntary field with a National Health Council, a national Blue Cross Association, and others. At the state level, interdepartmental committees on health services are becoming common. But at the local level, health authority generally remains highly dispersed with scores of agencies typically

involved—155 playing a role in one rural county studied in 1948.[7]

In a number of countries, consciousness of the need for improving local administration has been shown by launching demonstrations of fully integrated public health and medical care programs in selected localities. Space permits only mention of the names of some of these bold experiments: for example, the programs at Nancy, France; at Beth Mazmil, Israel; at Pholela, South Africa; at Swift Current in Saskatchewan, Canada; at Bayamon, Puerto Rico; at Quezaltepeque, El Salvador; and in the Sindhibis Valley, Egypt. Perhaps in every country there is some special effort at integration of all health services in one or more local areas. The approaches are different, of course, but the goal is always the same: to develop a comprehensive health program, involving both preventive and curative service, ambulatory and institutional care, with governmental and voluntary sources of financing, under a unified administration.

One word about the role of the general hospital, which many see as "the health center of the community." If the hospital is to be the center of preventive service, education, and research, as well as patient care on all levels, what becomes of the integrating role of the health department? There is no doubt of the strong position occupied by the general hospital everywhere in the professional lives of doctors and the emotional lives of people. Where the hospital is a public facility, as in most countries of the world, there is no reason why it cannot serve as the key physical instrumentality of a unified community health agency, along with health centers and other peripheral facilities. In the United States, however, where most local general hospitals are voluntary organizations, it is difficult to envisage their serving as coordinating administrative agencies. Hospitals have an enormous community task in almost every aspect of health service and medical science, but the job of supervising the whole community's health—with all its legal and organizational complexities—must be vested in a public body. While health departments in America seldom exercise such wide authority, they obviously offer the nucleus for such a future role.

The skeptic may ask, what is the point of all this? Why does it matter whether there are multiple agencies for multiple services, except to satisfy the compulsive demands of students of administration who like to see tidy organization charts? I would answer that there are sound human and social reasons for promoting unified health administration in general, and health department participation in medical care programs in particular.

The first reason is that such arrangements are most likely to have a preventive approach incorporated into day-to-day medical care administration—a point which can be well documented on this continent in the experience of Saskatchewan. Second, unified administration is most likely to be balanced, giving appropriate attention to different health needs in proportion to their quantitative importance, rather than in response to the strengths and weaknesses of various special interests. Third, unified administration can permit engagement of the highest calibre administrative skill at lowest over-all cost, by combining funds from many sources but avoiding duplication of work. Fourth, it can strengthen the competitive position of health services in the arena of government and in the larger arena of over-all national goods and services which must be financed. Finally, and most important, unified administration allows individuals to be served as whole persons—rather than as representatives of different diseases, age levels, social status, or other categories by which

health service is divided—so that continuous, sensitive, technically proficient, and comprehensive health care can be rendered. The person rather than the agency becomes the focus.

On a world level, one cannot help but see a trend in all countries toward more and more socially organized and financed health service. In a way, this is a trend from the free enterprise toward the universal service pattern. This is not an advocacy but an observation. If this observation is valid, it means that the need for health service coordination at the local level will become more and more manifest, both to the technical specialists and to the public at large. What we see in America today as the local health department, with its specified list of functions, may become the true community health administration of the future.

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Fellowships: Counseling the Physically Handicapped

Twenty $300 fellowships will be awarded through the cooperation of the National Society for Crippled Children and Adults and Alpha Gamma Delta Fraternity for a workship on counseling the physically handicapped (including the cerebral palsied) to be held at the Institute of Physical Medicine and Rehabilitation in New York City from June 13 through July 8. Interested, qualified professional persons who need and can utilize training in counseling the physically handicapped should apply before March 14, 1960. Transcripts of all academic work above high school level will be required. Information and application forms from Personnel and Training Service, National Society for Crippled Children and Adults, 2023 West Ogden Avenue, Chicago 12, Ill.

The importance of accident prevention in a community health program need not be emphasized. However, the significance of death certificates and mortality data in helping to delineate the problem do require emphasis, and this paper indicates specifically what may be learned from such sources.

ACCIDENT MORTALITY DATA AS EPIDEMIOLOGIC INDICATORS

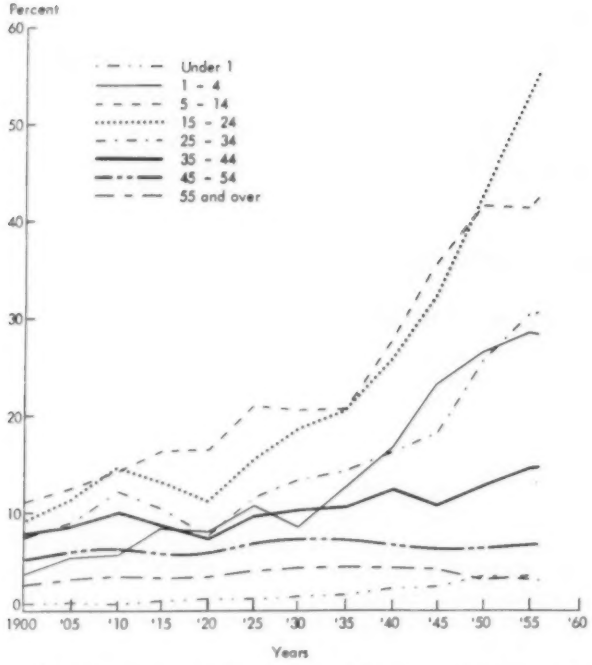
Albert P. Iskrant, M.A., F.A.P.H.A.

THE EPIDEMIOLOGIC APPROACH to accident prevention has received much emphasis in recent literature. Dr. John Gordon[1] and others have emphasized the importance of accidents as a public health problem and the increasing role of accidents as a cause of death. They have also stressed the fact that this health problem should be approached in the same way, with the same methods that were used in the epidemiologic approach to other mass health problems. Essentially this would involve: (a) collection and analysis of data, (b) examination of apparent relationships for other causative factors, (c) establishment of hypotheses regarding causation and testing them under controlled conditions, (d) development of control measures and testing them for effectiveness, and (e) incorporation of these tested control methods into programs of accident prevention.

It is not suggested that epidemiologic investigations into accidents be restricted to fatal accidents. This would be obviously ridiculous. For every fatal accident there are hundreds of accidents with injuries of varying degrees of severity and resultant disability. However, approximately 100,000 people die each year from accidents in the United States; the data are published and available for analysis. If we consider that the epidemiologic method starts with the analysis of data regarding host, agent, environment, and their interaction, there is a wealth of material available from the National Office of Vital Statistics, the National Safety Council, and others.

Extent of Problem

Let us start with deaths from accidents and see if they constitute a "public health problem," as we use the term. In Figure 1 we see that in the younger age groups the proportion of all deaths due to accidents has been increasing at a phenomenal rate. Accidents are now the leading cause of death in every age group from one to 35, and in the 15 to 24 group, they cause more deaths than all other causes combined. In terms of years of life lost, accidents are obviously a most significant cause of death. This leading role of accidents in deaths among younger persons is, in large part, due to decreases in other causes of death over the years. Figure 2 shows the trend



(Source: Basic data from National Office of Vital Statistics—Accident Prevention Program.)

Figure 1—Accidental Deaths as Per cent of all Deaths by Age Groups—Continental United States 1900–1956

since 1900 of the five leading causes of death of persons aged 15 through 24. It is noted that only accidents remain a significant cause of death in 1955.

Host Factors

Age—Accidental deaths in general are most common at both extremes of life—under one and over 65. They are lowest in the age group 5-14. The rate in the age group 85 and over is the highest, reaching over 750 per 100,000 per annum. Mechanical suffocation is the leading cause in infants, and falls account for the preponderance of accidental deaths in persons over 85. (Deaths from fires are also highest in these groups.) While many of the suffocations in infants and deaths from falls in older persons are believed by some not to be accidents, it seems clear that nonmotor vehicle accidental deaths are highest in the groups which are least agile and need most assistance in getting around. It appears then that the very young and the very old need protection from accidents, particularly from falls, fires, automobiles, poisonous gases, burns from hot substances, and corrosives. Poisoning by ingestion is also a problem of the very young, especially in the preschool child.

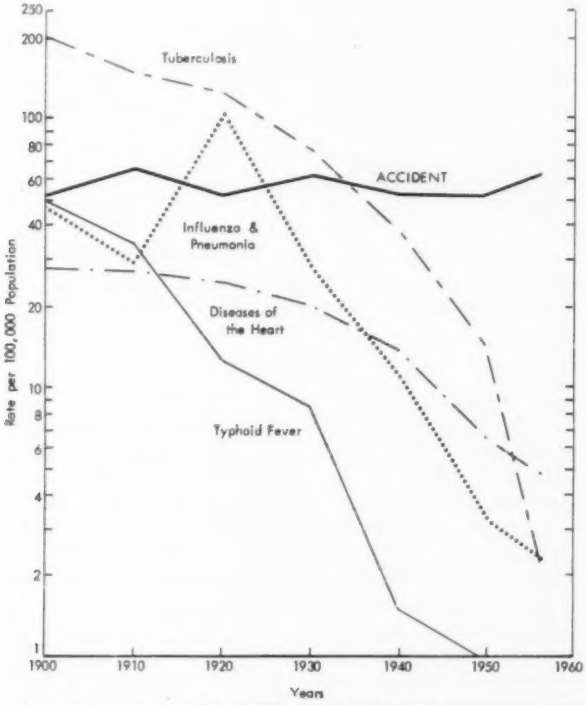
The lowest accidental death rate in the United States is in the school-age

child.* They have passed the age of high hazard from falls, fires, and poisons but have not yet reached the age at which death behind the wheel of the auto takes its toll. Drowning, however, is an important cause of death in this age group, as is death from bicycle accidents.

In the late teens and early twenties the automobile becomes the chief killer. In this age group, automobiles cause approximately one-third of deaths from all causes and has become relatively even more important in recent years (Figure 3). In 1930 less than 10 per cent of the deaths in this age group were due to automobiles, whereas in 1955 over 35 per cent were so caused.

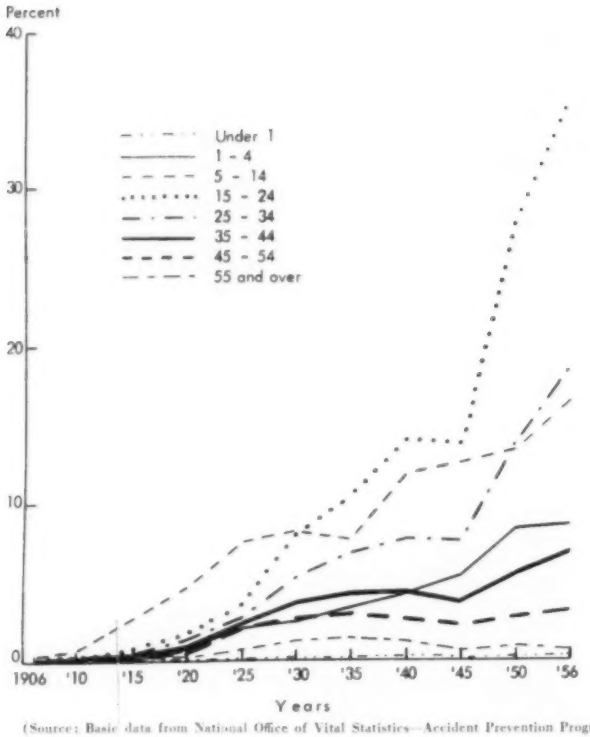
Sex—As is true for most causes of death, males have a higher death rate from accidents than females have, except in the age group 85 and over (Figure 4). The ratio climbs fast, reaches a peak in the late teens or twenties, then declines, and finally becomes less than one (except for automobiles) in the age groups over 75. For automobiles, however, the ratio stays over

* (This is in contrast with the accidental injury rate which is high in this group, as also is the proportionate mortality from accidents—see Figure 1.)



(Source: Basic data from National Office of Vital Statistics—Accident Prevention Program.)

Figure 2—Death Rates from the Five Leading Causes of Death in 1900 Among Persons 15–24 Years of Age—Continental United States 1900–1956



(Source: Basic data from National Office of Vital Statistics—Accident Prevention Program.)

Figure 3—Deaths from Motor Vehicle Accidents as Per cent of Deaths from All Causes by Age Groups—United States 1906–1956

two and in fact increases somewhat in the later years. This increase after age 50 in the ratio of male to female deaths from motor vehicle accidents is to a large extent due to deaths of pedestrians. On the other hand, the ratio for falls drops from around six to one in the twenties to 0.7 to one in the age group 85 and over. One could speculate that elderly gentlemen drive and, more particularly, walk around subjecting themselves to the hazards of highway accidents, whereas elderly females work and stay around the house and so are subject to falls. It is also possible that the high death rate from falls in elderly females may be due to physiologic or pathologic differences. Whether such factors predispose to the occurrence of the accidental injury or to the fatality as a result of the injury is not clear. From a few scattered studies on injuries due to falls, it would appear that the change from excess in males in younger age groups to an excess in women in the older age groups is true of injuries, as well as of deaths due to falls.

Race—In general, accidental death rates are higher for nonwhite than white persons; this is true for both male and female; it is true of railroad accidents, highway accidents, water transportation

accidents, poisoning by solids or liquids, fire, other burns, firearms, suffocation, and drowning. For accidental deaths from aircraft, machinery, electricity, and falls the opposite is true, with the rate for whites higher. The higher rate for falls among white people is almost entirely due to an increasing ratio after age 65. In the group over 80 years of age, the rate is almost four times as high in white males and over five times as high in white females. This switch to higher rates in white persons is true for all "accidents" in the age groups over 75.

Figure 5 illustrates these changes for both sex and color in the death rate from falls. In the early adult years the male rate is higher than female for both colors, and the nonwhite rate is higher than white for both sexes. After 75 years of age the male rate is lower than the female for both colors, and the nonwhite rate is much lower than the white for both sexes.

This change of ratio for color had been previously observed in diabetes and other conditions,[2] and needs further investigation to determine if it is real or merely a function of the estimate of the population.

Marital Status—Married people have fewer accidental fatalities from all causes and at all ages than do single, widowed, or divorced persons; rates for the widowed are higher than for the married, and those for the divorced higher than for the widowed (Table 1). An exception is true of males under 20, where the rate for automobile accidents among married persons is higher than for either single or widowed persons. The accidental death rate for females is also higher for the widowed than for the divorced at ages under 35. This is true both of automobile and other accidents. An-

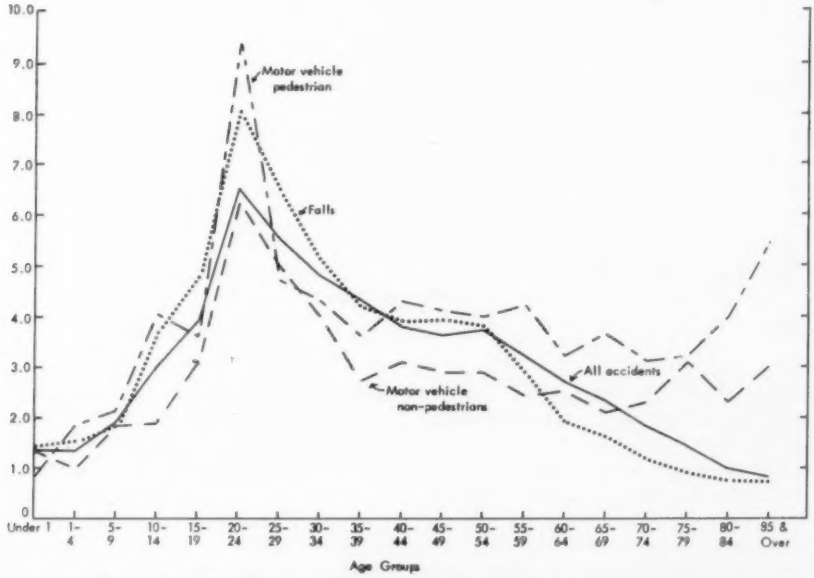


Figure 4—Ratio of Male to Female Death Rates for Accidents—1956

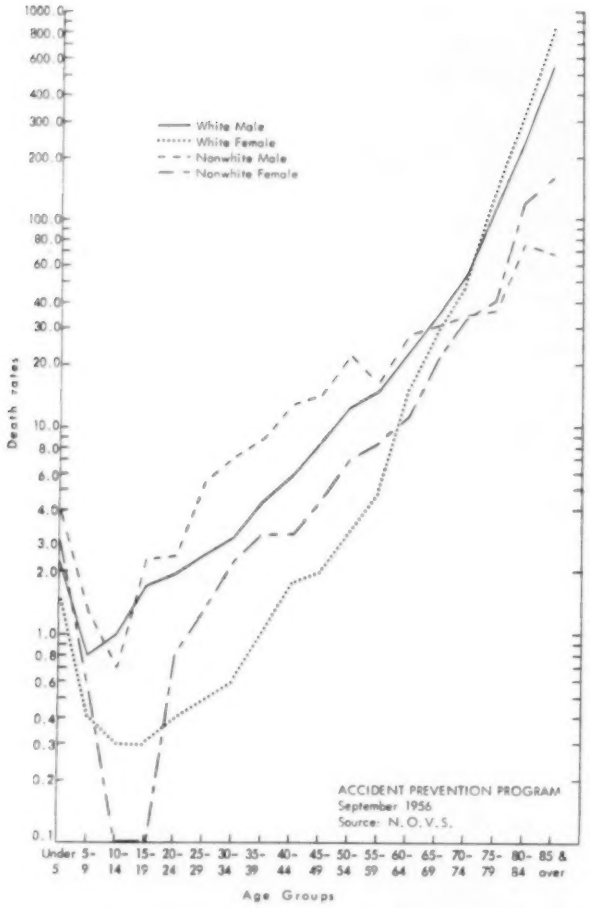


Figure 5—Death Rates from Falls by Color and Sex Continental United States—1956 (Rates per 100,000 Population)

other interesting observation is the switch to higher rates in the single than in the widowed, in the older age groups. Granted possible inaccuracies in population data by marital status, it would seem that married persons have fewer accidental deaths than nonmarried persons, and that persons who have been married, but now are not, have still more accidents. Differences are most pronounced in the death rates from motor vehicle accidents in males, where in each age group the rate for the divorced is about three times as high as for the married. This advantage of married life at every age is true of practically all diseases (except such obvious examples as diabetes in women). One could spec-

ulate regarding reasons for increased accident hazards in the unmarried, especially the higher death rates in divorced males. To be conservative, it can be said that these mortality data are not in conflict with hypotheses of accident causation which stress the emotional or behavioral aspects.

Physical Conditions—The extent to which chronic illness and impaired functions influence the incidence of accidental injuries or fatality from accidental injuries is not presently known. Many studies of accidental fatalities appear to show increased prevalence of physical handicaps in persons dying from falls or other accidents. In an interesting presentation, Brightman, et al.,[3] com-

Table 1—Death Rates from Accidents by Age, Sex, and Marital Status Average 1949–1951—United States (Rates Per 100,000 Population)

Age	Single	Married	Widowed	Divorced
20–24				
Male	113.5	80.7	224.4	205.2
Female	18.5	14.8	79.1	53.9
25–34				
Male	111.8	64.6	246.1	227.4
Female	19.0	13.9	45.8	39.1
35–44				
Male	129.2	63.5	193.3	232.0
Female	18.8	14.5	39.3	41.4
45–54				
Male	151.3	68.7	166.4	241.9
Female	22.2	19.3	33.9	37.2
55–59				
Male	183.8	79.3	182.2	272.7
Female	29.7	25.9	36.7	46.2
60–64				
Male	211.6	98.2	181.5	275.3
Female	44.4	34.7	49.9	65.0
65–69				
Male	239.7	105.5	203.5	315.4
Female	73.2	50.5	64.8	89.4
70–74				
Male	341.7	132.6	242.0	416.0
Female	142.6	95.7	115.9	174.9
75 and over				
Male	597.1	276.3	500.9	824.6
Female	533.0	291.8	469.2	547.2

(Source: Vital Statistics of the United States, Special Reports, Volume 39, No. 7, NOVS. DHEW-PHS Accident Prevention Program Division of Special Health Services, December, 1957.)

pare the incidence of chronic disease as a secondary cause of death where the primary cause was home accidents and cancer. The larger proportion of chronic illnesses in those dying from accidents than from cancer suggests to the authors that chronic illness is associated with deaths from home accidents. Studies are underway to clarify this possible association in groups of persons with and without specific ailments.

Agent

The agent in accident causation is not always as obvious as it would seem. The agent may be described as the object most closely associated with the occurrence of the accident: the loose step, the faulty brake, the loaded gun. Much hope for reduction in accidents is placed on control of the agent. More and more emphasis is being placed on design of the agent for maximum safety (and comfort) of the host. This has sometimes been called "human engineering."

The motor vehicle is the agent most commonly involved in accidents, with over 10 per cent of all deaths from accidents (Table 2). Approximately 10,000 persons were killed by automobiles in 1956. Almost 8,000 (one-fifth) of them were pedestrians who were hit by cars. The other deaths were a result of being thrown from the car or the consequence of injuries sustained when the victim struck objects within the car, due to sudden stopping of the car, collision, or by the car turning over. A surprisingly low number of fatal or severe injuries are caused by structural collapse of the vehicle; ejection or hitting parts of the body are the chief causes. The automobile can be the "agent of accident" or it can be the "agent of the injury," and these may be considered as separate but important problems. The "Cornell Crash Injury" research and others have shown that much can be learned about the design of the automobile and seating of the passengers for minimizing injury after the accident occurs.

In considering trends from the various types of highway accidents, we note that pedestrian deaths have decreased considerably and consistently from their peak in 1937. Deaths from collisions with railroad trains, streetcars, bicycles, and animal-drawn vehicles (or animals) have also decreased. Deaths from collisions with other motor vehicles, with fixed objects and noncollision accidents have increased.

Falls are the second highest cause of accidental death, with approximately 20,000 deaths per year. About two-thirds of these falls are at home, with the bedroom the most frequent place of occurrence. Most of these deaths at home are of elderly people and occur while walking around. Chairs and beds are the most common agents in these cases, and many elderly people "just fall," with no obvious agent identified. In falls from "higher to lower level," the stairs are the agent most frequently identified. Outside stairs seem to be most commonly involved in accidental deaths, with inside stairs and stairs to basement next, in order of frequency. A rather complete analysis and description of data from 16 states, collected as supplemental information on deaths from home accidents for 1952-1953, is published by the National Office of Vital Statistics,[4] and much detail is available for those interested in further study.

One of the factors which requires study in connection with accidental falls (and other accidents) is the physical condition of those who have accidents. The data from the 16 states show that of those who died from falls, approximately half (45 per cent) had no recorded physical handicap, 22 per cent were unsteady or feeble, 7 per cent had a heart or circulatory disorder, 6 per cent were blind or had poor eyesight,

5 per cent were lame, and other handicaps were present in small proportions.

Fire and explosion were the next most frequent causes of deaths from accidents in 1955 (over 6,000). The cooking stove was the agent most frequently responsible for those killed at home, with the furnace next, and cigarettes or pipe the third most frequent cause (in the latter, nearly all cases were connected with falling asleep).

Drowning is the next most common cause of accidental death, with almost 5,000 deaths in 1956. In addition, about 1,500 were killed in water transportation accidents. Next to automobile acci-

Table 2—Accidental Deaths by Type of Accident, Race and Sex—United States—1956

Type of Accident	Total	White		Nonwhite	
		Male	Female	Male	Female
Total	94,780	56,645	25,261	9,178	3,696
Railway	1,319	928	119	248	24
Motor-vehicle	39,628	26,034	8,711	3,770	1,113
Traffic accidents	38,740	25,453	8,505	3,693	1,089
to pedestrians	7,398	4,618	1,548	931	301
Nontraffic accidents	888	581	206	77	24
to pedestrians	519	310	149	43	17
Other road-vehicle	285	184	61	34	6
Water-transport	1,508	1,179	115	197	17
Aircraft	1,523	1,354	149	14	6
Poisoning by solid and liquid	1,422	660	442	213	107
Poisoning by gases and vapors	1,213	794	292	82	45
Falls	20,282	9,088	9,897	808	489
On stairs	2,483	1,258	1,016	137	72
From ladder	320	266	35	19	—
Other falls from one level to another	3,744	2,171	1,162	305	106
Same level	3,369	1,539	2,178	81	71
Unspecified	9,866	3,854	5,506	266	240
Blow from falling object	1,334	1,110	39	178	7
Machinery	2,086	1,830	60	190	6
Electric current	952	827	71	52	2
Fire and explosion of combustible material	6,405	2,653	1,899	920	933
Hot substances, corrosive liquid and steam	722	311	245	74	92
Firearms	2,202	1,632	188	315	67
Inhalation and ingestion of food or other object causing obstruction or suffocation	1,760	854	529	220	157
Mechanical suffocation	1,554	710	359	284	201
Drowning and submersion	4,902	3,257	674	872	99
All others	5,683	3,240	1,411	707	325

(Source: NOVS—Vital Statistics of the United States—1956. DHEW-PHS Accident Prevention Program Division of Special Health Services, May, 1958.)

dents, drowning is the most common cause of accidental death in young and early adulthood. Most of these drownings involved persons swimming or playing in the water, but many of them were nonswimming fatalities consisting of recreational boating accidents, stumbling or slipping into the water, and the like. In this connection it is important to emphasize that in young children under five years, only 5 per cent of those drowned were playing in or near water at pools, beaches, or parks. About one-third of the victims drowned on the home premises; the remainder in rivers, creeks, lakes, fishponds, cesspools, and the like, near the home premises and while not supervised.

Over 2,600 persons died from poisoning in 1956; 1,400 of these deaths were caused by solid or liquid substances. Barbituric acid and its derivatives were the chief cause of death from poisoning in 1956, as in prior years. For children, aspirin was the most fatal drug. Petroleum products and other household products are also a common cause of poisoning. In younger children, poisoning is to large extent a function of availability of the products, and control of the situation is almost entirely in the hands of parents and guardians.

Environment

Geography—Ordinarily, we think of the geographic distribution of disease or injuries when we discuss environment, and many important clues to the etiology of disease have been obtained through the study of geographic distributions. When accidental deaths from motor vehicles are studied in terms of residence, a kind of pattern appears; the states with the highest rates are chiefly in the mountainous and southern parts of the country while those with the lowest rates are in the Northeast. In looking at the rates per miles driven, the southeastern states are pre-eminent. Based on the rate per miles driven, except for Montana, all the states in the top quartile are southern ones, and without exception all the states in the lowest quartile are northern.

The pattern of pedestrian deaths is a different one, although Arizona, New Mexico, and Utah are among the highest states. The West North Central States are now in the lowest quartile with the East North Central and Middle Atlantic States having high rates. The degree of urbanization and the proportion of the population in the older age groups may account in part for the high pedestrian death rates in the Middle Atlantic and East North Central, but they do not account for the low rates in the West North Central States.

The death rate from falls shows a different pattern with the North, especially the Northeast, high and the South, in general, low. This distribution may be in part, a function of age; northern states in general have a higher proportion of persons over 65. It may also be influenced by the slight positive correlation between socioeconomic status and deaths from falls. The reasons for these patterns are not clear; the numbers of stairs in houses, existence of basements, icy sidewalks and steps, and the like may all be contributing factors.

The death rate from fires and explosions shows a marked excess in southern states. In this area the use of petroleum products as fuel for stoves, and as "starters" for coal and wood fires has long been suspected as a contributing cause to the higher rates. To test this hypothesis and to obtain details on the causes of fires and explosions and ways of preventing them, an epidemiologic study is being carried out in a county in a southern state.

Other forms of accidents, such as those due to drowning and firearms, also exhibit geographic variation and allow pinpointing of areas of high risk.

Seasons — An environmental factor

which obviously affects accidents is the season. Drownings are highest in the summertime, as are many other accidents, due to activity which is more common at that season. Motor vehicle deaths are highest in the fall and winter, but drop off in January. December is the month with the highest number of deaths and also the highest death rate based on mileage. January becomes one of the high death rate months when mileage is considered.

Time—As regards time of day, all rates based on estimates of miles driven have night death rates on the highway higher than daytime rates both for urban and rural areas. While the rural rates are higher than urban for both day and night, the night-day ratio is higher for urban areas. For pedestrians the hours of highest fatalities appear to be those associated with sunset (4-5 p.m. in winter months and 8-9 p.m. in summer). This is true of both urban and rural areas. This association is not apparent in deaths of nonpedestrians.[5]

Weather—Another environmental factor which presumably affects accidental mortality is weather. The role of weather in hurricanes, floods, and similar events is obvious; not so obvious is its effect on motor vehicle and other accidental deaths. Data showing that the bulk of fatalities occur on days without rain, snow, or fog, on dry pavement are useless in assessing the role of weather and road conditions as that is the usual condition. Fragmentary data from a few studies suggest that inadequate coping with road conditions increases the accident potential and that accident frequency increases with increased precipitation. There is a suggestion that the onset of the inclement weather is the crucial period.

It has been speculated that changes in barometric pressure, changes involving cyclogenesis, infra-long-wave radiation, and other factors affect accident experience possibly through their effect on peoples' moods and behavior. Completed studies have shed little light on this subject.

Location—The location of the accident causing death is an important item in developing control methods. Identification of three-lane highways and four-lane highways with uncontrolled access as places of high mortality has given considerable impetus to highway design. Identification of intersections and streets of high death rates of pedestrians and from other types of motor vehicle accidents have helped local authorities to introduce corrective measures. In rural areas accumulation of fatality data has pinpointed road stretches of high risk needing extra lighting, road redesigning, and the like.

Analysis of mortality data can also help to identify the location of fatalities within the home or in other places, and the agents involved in such accidents. In the home, for instance, the bedroom is the most common place of accidental deaths from falls and fire, stairs are next highest, and the kitchen is third, with falls and fire also the most frequent causes of death. This is in sharp contrast to nonfatal injuries where the yard leads, and the kitchen is next. The bedroom is the place of accident in about one-third of the fatalities, but in only about 6 per cent of the nonfatal injuries. The high death rate from falls in older people, many of whom are confined to their rooms, undoubtedly accounts for the bedroom's role.

Epidemiologic Investigations

It is not suggested that the study of deaths from accidents be limited to such items as are discussed here. Epidemiologic investigations can be and have been made on the many facets of the host, the agent, the environment and their interaction. Special follow-up is usually needed to ascertain more detail about the circumstances of an accident.

The burden of this paper is that analysis of death certificates available to health departments can reveal much information which helps to delineate the problem and assists in program planning.

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National Wildlife Week

The week is March 20-26 and the theme is "Water: Key to Your Survival." Since 1938, the National Wildlife Federation and its state affiliates have been sponsoring this week as the beginning of a year-long educational campaign to interest people in conservation. This year's program will stress the vital need for giving people a better understanding of the critical water problems faced throughout the country.

A brochure and other educational materials listed on an order form-catalog may be obtained by individuals and agencies interested in supporting and publicizing this educational effort from Stewart M. Brandborg, assistant conservation director, National Wildlife Federation, 232 Carroll Street, N.W., Washington 12, D. C.

In order to determine the status of school services currently provided to handicapped children, a questionnaire was sent to officials in 106 cities with a population of 100,000 or more. The results are analyzed in this report and suggestions for improvement are made.

SCHOOL SERVICES FOR HANDICAPPED CHILDREN IN URBAN AREAS

Helen M. Wallace, M.D., M.P.H., F.A.P.H.A., and Helen M. Starr, Ph.D.

BECAUSE OF THE increasing recognition of the importance of the worth, rights, and privileges of the individual in our culture, the services provided for each of us in a community take on significance, if each one is to be helped to fulfill his potential. This applies as well to children who are handicapped. Among the services necessary to assist handicapped children to achieve their maximum potential is education. It seems timely, therefore, to look at the school services provided for handicapped children.

Method of Study

During the winter of 1958 a questionnaire was sent to the health officers and superintendents of schools in each of the 106 cities of the United States having a population of 100,000 or more according to the 1950 census. The questionnaire contained items regarding the types and numbers of handicapped children cared for in the public school system; the age of admission; the kinds of school facilities provided; the presence of established criteria for special educational placement, and the agency responsible for their establishment; the method of review of applications for special educational placement, personnel engaged in such review, frequency of review; organization of special education within the public school system; method of financing and costs of education of handicapped children; and the provision of transportation and attendant service during transportation of handicapped children to and from school. This paper summarizes the information provided on the questionnaires.

Study Findings

According to the 1950 census, the 106 cities had a combined total population of 44,311,716, or 29.4 per cent of the total population of the United States, and a combined school enrollment of children aged five through 17 years of 7,192,100 or 28.4 per cent of the total population. Ninety-eight of the 106 cities responded (92 per cent of the cities). These 98 respondent cities had a combined total population of 41,686,921 (94 per cent) and a combined school enrollment of children aged five through 17 years of 6,840,105 (95 per cent).* All 98 respondent urban communities provide some school services for some types of children who are handicapped.

* The cooperation of the Health Departments and Boards of Education in providing the information is gratefully acknowledged.

Table 1—Types of Handicapped Children Included in Public School Systems and Age of Admission

Age	Orthopedic	RF, HD	Epilepsy	Hard-of-Hearing	Deaf	Partially Sighted	Blind	Cleft Palate	Speech	Emotionally Disturbed	Mentally Retarded
Senior H. S.							1				
7 and 8 Grades										1	
10 years										1	
9 years										1	4
8 years									1	1	10
2nd Grade						1					
1st Grade									1		
7 years		1	1			1		1	1	1	13
6 years	35	36	26	27	12	43	26	25	31	22	32
5¾ years	1	5	5	5	1	6	5	3	3	1	2
5⅔ years	2	2	1	2	1	2	1	2	2		1
5½ years	2	1	1			2		1	2		3
5 years	23	27	25	18	8	21	16	22	27	17	16
4¾ years	3	1	2	4	1	4	2	3	5	1	
4⅔ years								1	1		
4½ years	4	4	5	4	3	4	2	5	5	1	3
4 years	6	2	1	7	7	1	3	1	1	2	1
3½ years					2						
3 years	17	2		16	30	2	10	3	5		
2⅔ years					2						
2 years					1						
Age not stated	5	8	9	10	5	5	7	9	9	27	13
None cared for		9 (9.2%)	22 (22.4%)	5 (5.1%)	25 (25.5%)	6 (6.1%)	25 (25.5%)	22 (22.4%)	4 (4.1%)	22 (22.4%)	
Totals	98	98	98	98	98	98	98	98	98	98	98

Types of Handicapped Children Included and Age of Admission to School

All 98 school systems have some provision for children who have an orthopedic,† neuromuscular,† or neurological condition,† and for children who are mentally retarded. All but 4 per cent have provision for children with speech difficulty, all but 5 per cent for children who are hard of hearing, all but 6 per cent for children who are partially sighted, all but 9 per cent for children with rheumatic fever or heart disease. Children who are less frequently provided for are those with epilepsy, cleft palate, the emotionally disturbed, the deaf, and the blind (Table 1).

It is becoming more accepted that handicapped children, especially certain types, may benefit from school attendance during the preschool period. Therefore, the age of admission to school has considerable importance. Forty-six of the school systems admit deaf children under the age of five years, 31 admit the hard-of-hearing, 30 admit the orthopedic group, 17 admit children who are blind or who have speech problems, 13 admit children with cleft palate, 11 admit the partially sighted, nine admit children who have rheumatic fever or heart disease, six epilepsy, and four school systems admit children who are emotionally disturbed or are mentally retarded (Table 1).

With increasing concern about the problem of mental retardation in more recent years, the questionnaire contained inquiry regarding the minimum IQ level of the child necessary for school admission. Forty-nine per cent of the school systems require an IQ level in the range of 50-75, 42 per cent in the range 25-50, and 4 per cent of the school systems require an IQ level of 20.

† In the questionnaire these three categories were grouped together.

Type of Educational Placement Provided

The type of educational placement provided and, of course, the quality of the service within the individual placement constitute important aspects of the care of handicapped children. To state it simply, the more services, and the more comprehensive and individualized the services provided in an ambulatory school program (either special class or special day school) and in related community agencies, the less need will there be to place in a special residential school, on home instruction, or on instruction in a hospital or convalescent home, children who can be included in a modified program at school.

Answers to these parts of the questionnaire were not complete. Nevertheless, it is possible to portray some picture at the present time. For example, the most frequent plan for education of the orthopedic group of children, other than regular class in regular school, is the provision of special day class, home instruction, and hospital and convalescent home; the second most frequent plan is the provision of special day school, home instruction, and hospital and convalescent home; the third most frequent plan is the provision of home instruction, and hospital and convalescent home. The most frequent type of plan for the rheumatic fever and cardiac group, and the epilepsy group, other than regular class in a regular school, is home instruction. The most frequent plan for the hard-of-hearing, the deaf, the partially sighted, and the blind groups of children is special day class and special day school. The most frequent plan for the mentally retarded, speech, and cleft palate groups is special day class. The most frequent plan for the emotionally disturbed is special day class and home instruction. A fair number of school systems provide special day schools only, especially for the deaf,

hard-of-hearing, partially sighted, and blind groups. The provision of only a residential school is almost completely limited to the deaf, blind, and emotionally disturbed groups. It is gratifying to note that in only a few communities is education of handicapped children provided only in hospitals or convalescent homes.

Method of Educational Placement

Ninety-one of the 98 reporting public school systems (93 per cent) stated that they had established criteria for the educational placement of handicapped children. Of the other seven school systems, one each had such criteria for cerebral palsy, for blindness, and for mental retardation. Four did not answer this question.

In 47 per cent of the public school systems, responsibility for establishing the criteria for educational placement has been assumed by the local government, predominantly the local Board of Education. In 29 per cent the responsibility has been assumed by the state government, predominantly the State Department of Education. Participation of the health department, either local or state, is very small. In 18 local communities which had established criteria for educational placement of handicapped children, the professional disciplines were listed; in only seven of these 18 communities was there medical participation in the establishment of these criteria.

In half (49) of the public school systems, the Board of Education alone reviews the applications for special educational placement. In no instance is such a review carried out by the Department of Health alone. In approximately one-fifth (20) of the school systems the review carried on is jointly by the two departments—education and health. The recommendation of the practicing physician was acted upon without any agency review in only three school systems.

The number of professional personnel reviewing applications for educational placement ranged from one in one school system to 12 in another. The most frequent number of participants was six in 18 school systems. It is gratifying that in most school systems more than one professional person is responsible for the review of applications.

The type of professional person participating in review of applications is of the utmost importance. As shown in Table 2, the most frequent types are the psychologist and the school administrator. The nurse and the teacher participate in about one-half of the school systems, the social worker and the school counselor in about one-third. There is limited participation by such personnel as the director of special education and the vocational counselor. In all school systems, except 14, there was some type of medical participation in review of applications. It is surprising to find infrequent participation by certain medical specialists, for example, the cardiologist, pediatrician, ophthalmologist, otologist, or orthopedist (Table 2).

It is considered essential that there be a careful review of all handicapped children, not only before educational placement, but also periodically during such placement and prior to withdrawal from such placement. The questionnaire asked for information on all three aspects. Ninety-six per cent of the school systems indicated that all applications are reviewed prior to placement, in 85 per cent children are reviewed periodically during placement, and in 70 per cent children are reviewed before withdrawal from placement.

Inquiry was also made regarding the frequency of periodic review of the children during placement. Forty-five per cent of the school systems review children in special day classes at least once a year, 39 per cent review children

on home instruction at least once a year, 32 per cent review children in a regular class at least once a year, 31 per cent review children in special day school at least once a year, 17 per cent review children in hospitals and convalescent homes at least once a year, and 9 per cent review children in special residential schools at least once a year. The stated range of frequency of review varied from once a week (in one special residential school and on home instruction) to a complete lack of review for children on home instruction in two school systems.

Because it is recognized that "paper review" of children may not provide as complete a picture of the child, his progress, and his needs, as when the child and his family are seen personally, the questionnaire contained an inquiry regarding the provision of a team, either from the Board of Education or the Department of Health, who personally see and evaluate all handicapped children. Thirty-eight per cent of the communities do provide such a team, 35 per cent do not, and 27 per cent did not answer this question. The number of personnel employed on a team basis for such an evaluation vary from one person in about 10 per cent of the communities to seven persons in one community for the orthopedic group. Most of the communities which do provide a team have two or three people on the team. The orthopedic and hard-of-hearing groups of children are more likely to be seen by a team; the children with epilepsy and speech problems are least likely to be seen. A psychologist and a physician (whose type was not stated) were most likely to be used. Other personnel used with some degree of frequency were the teacher and the nurse. It is surprising to find that community facilities were used rarely, and that personnel such as a social worker, school counselor, the school physician, and certain medical specialists (pediatrician, ophthalmologist, otologist, cardiologist, and orthopedist) were used relatively infrequently. A psychiatrist was used in one instance. Another surprising finding was that a Crippled Children's Clinic was very infrequently used. Children who had orthopedic handicaps, rheumatic fever or heart disease, epilepsy, or who were hard-of-hearing, partially sighted, or blind were more likely to be seen by some type of physician; children with speech problems or mental retardation were least likely to be seen.

Table 2—Type of Personnel Participating in Review of Applications

Type of Person	Number of Schools
Psychologist	87
Administrator	87
Nurse	57
Teacher	53
Social worker	34
School counselor	33
Director of special education	16
Vocational counselor	8
Medical Participants	
Physician—type not specified	33
Orthopedist	19
Otologist	17
Family physician	16
Ophthalmologist	16
Pediatrician	12
School physician	13
Psychiatrist	9
Various medical specialists	8
Neurologist	4
Medical director	3
Cardiologist	3
Miscellaneous	4*
Miscellaneous	4†

* Composed one each of doctor in Board of Education clinics; plastic surgeon; epilepsy clinic; health department.

† Composed one each of assistant superintendent of schools; speech therapist; counselor in guidance; director of health service.

Table 3—Provision of Transportation and Attendant Service During Transportation

	Transportation			Attendant Service		
	Provided	Not Provided		Provided	Not Provided	
		Number	Per cent		Number	Per cent
Orthopedic	85	13	13.3	35	63	64.3
RF, HD	50	48	48.9	16	82	83.7
Epilepsy	26	72	73.5	8	90	91.8
Hard of Hearing	50	48	48.9	15	83	84.7
Deaf	48	50	51.0	16	82	83.7
Partially Sighted	61	37	37.7	18	80	81.6
Blind	50	48	48.9	18	80	81.6
Cleft Palate	13	85	86.7	5	93	94.9
Mentally Retarded	56	42	42.9	20	78	79.6
Speech	8	90	91.8	3	95	96.9
Emotional	12	86	87.7	7	91	92.9

Financial Aspects of Education of Handicapped Children

The source for financing the education of handicapped children is predominantly a combination of local and state tax funds (86 of 98 schools). In only one school system was the financing derived entirely from local tax funds, and in only two school systems entirely from state funds. A tremendous variation exists in the proportions of local-state participation in financing, the most frequent method being equal sharing of costs by local and state governments. The most frequent method of allocation of funds used for education of handicapped children was on a per pupil basis (32 out of 98 school systems); a per teacher or a per class basis are used less frequently (12 and 15 school systems respectively).

Efforts were made to secure data on the costs of education of handicapped children in the various areas of educational placement. Lack of sufficient data prevents a report on costs at this time.

Transportation of Handicapped Children to and from School

Table 3 presents data on the provision of transportation and attendant service during transportation of handicapped children to and from school. It is evident that school systems are more likely to provide transportation than attendant service. Children with orthopedic handicaps or who were partially sighted are most likely to be transported; those who are emotionally disturbed, who have speech defects or cleft palate are least likely to be transported. Attendant service, while not provided for any group of children to any large extent, is most frequent in the orthopedic group. The children with speech problems, cleft palate, emotional difficulty, and epilepsy are least likely to have attendant service.

Discussion

It is of course highly gratifying that all of the 98 respondent cities with a population of 100,000 or more provide

some school services for some handicapped children. It is evident that proportionately more services are provided for those children who have an orthopedic, neuromuscular or neurological disability or who are mentally retarded, than for certain other children, especially the deaf, the blind, and the emotionally disturbed. The latter groups need to be more fully provided for in the school setting. Furthermore, there is need to extend the policy of earlier admission of certain types of handicapped children to public school systems, especially the deaf, the blind, the hard-of-hearing, the partially sighted, and certain groups of children with orthopedic, neuromuscular, or neurological disability.

While all school systems responding to the questionnaire provide some services for mentally retarded children, the admission criteria, particularly with regard to the IQ level, vary considerably. The general trend over the past decade has been to admit more and more children with a gradually lower IQ level, although it is recognized that other factors besides IQ level must be taken into consideration. This applies particularly to such other aspects as the medical and health condition of the child, his social and psychological adjustment, and his previous family environment and training.[1]

Children with an orthopedic handicap are the most broadly provided for, from the viewpoint of a wide range of available educational settings. Those communities providing special day schools only are likely to do so for deaf, blind, hard-of-hearing, and partially-sighted children. Communities that provide home instruction only are likely to do so for the rheumatic and cardiac and epilepsy groups. Those providing residential schools only are likely to do so for the deaf, blind, and emotionally disturbed groups of children. In general, one hopes that all public school systems in the larger urban areas would have provision in regular classes and special day classes for all types of handicapped children. One would also hope that the three other kinds of services—home instruction, special day school, and hospital and convalescent home care—would be reserved for certain children for relatively brief periods of time for a specific indication. Furthermore, while the child is receiving his education, some thought and planning must be devised by community agencies for the child's life-time program.

Most of the communities have established criteria for the admission of handicapped children to their public school systems.[2] Two points particularly stand out in connection with the method used to set up the criteria—the lack of participation of the health and welfare departments, of the various medical specialists, of educational and vocational counselors, and social workers. In setting criteria, it would certainly seem desirable that these groups be included.

When it comes to the plans which have been developed for review of applications for educational placement of handicapped children, there has again been too little participation by health departments. One would hope that such a review might become one jointly carried on by staff members of the Board of Education and the Department of Health of the individual community. A good many communities are now using a team, as demonstrated by this study. Suggestions to strengthen the composition of such a team include greater use of the nurse, the teacher, the social worker, the school counselor, and the vocational counselor, as well as greater use of medical specialists (pediatrician, cardiologist, ophthalmologist, otologist, and orthopedist) and of the school physician. Furthermore, there is need for review not only of the initial application, but also periodically of the child wherever he is, and also prior to withdrawal

from placement. Certainly periodic review once a year should be considered a minimum; preferably, each handicapped child should be reviewed much more frequently. This policy applies to handicapped children wherever they are —in regular class, special day class, special day school, special residential school, home instruction, hospital or convalescent home. Some difference of opinion exists regarding the need for the review team personally seeing and evaluating the child and his family as against the use of a "paper review." Nevertheless, in two previous studies in one community[3,4] it has been demonstrated that, unless the child is seen, numerous inappropriate educational placements occur and important health and social problems are missed.

It is surprising to find that community facilities for evaluation of handicapped children and their families are being used to such a small extent. It would seem logical to expect that where a well developed evaluation and diagnostic service exists in a community—either in a hospital or in a crippled children's service—it would be easier and less expensive for the school system to use it, rather than developing a duplicate service of its own.

Evidence exists for the need to look at and strengthen the provision of transportation and attendant service during the transportation of children to and from school.

Summary

This paper describes the results of a questionnaire sent to the 106 cities of the United States with a population of 100,000 and over, in regard to school services currently being provided for handicapped children. There is considerable variation in the range of services provided as a whole, and equal variation among the various types of handicapped children. Suggestions are made for further strengthening of such services, if handicapped children are to have an opportunity to achieve their full potential.

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This paper was presented before the Maternal and Child Health Section of the American Public Health Association at the Eighty-Sixth Annual Meeting in St. Louis, Mo., October 29, 1958.

A survey of Indian children in 1957 revealed a number of conditions. The findings point to the need for further action, both in terms of investigation and therapy. Emphasis is placed on the need for education.

REPORT OF PEDIATRIC EVALUATIONS OF A SAMPLE OF INDIAN CHILDREN—WIND RIVER INDIAN RESERVATION, 1957

Georgia B. Perkins, M.D., M.P.H., F.A.P.H.A., and Gertrude M. Church, R.N., M.A.

Program Planning

THE WIND RIVER Indian Reservation in central Wyoming covers 2,000,000 acres. There are 3,589 Indians living on it; 1,382 are members of the Shoshone and 1,977 of the Arapahoe tribes. About 230 Indians of other tribes and an undetermined number of white families are also residents on the reservation. The Indian population is relatively highly cultured with a rather low illiteracy and indigency rate. Children of school age attend county schools along with the non-Indian population. The tribal government consists of a joint Arapahoe and Shoshone 12-member business council representing the various geographical sections of the reservation. Since 1952, a tribal Board of Health consisting of six members of the business council has been functioning.

During the fall of 1956, the Sub-Area Medical Officer, Division of Indian Health, Billings, Mont., was approached by members of the Joint Tribal Council Board of Health who asked that a multiple screening program of blood testing, chest x-rays, and diabetes screening be offered to the reservation. The assistance of the Denver Regional Office staff of the Department of Health, Education and Welfare, Public Health Service, and Children's Bureau was requested, and the survey was set for the fall of 1957.

Meetings were held with members of the Billings Sub-Area Office, Division of Indian Health Service staff, representatives of the Wyoming State Department of Health and of the Regional Offices of both the Children's Bureau and Public Health Service, Denver, Colo. General areas of responsibility, amounts and types of contribution to the project, and assignment of personnel from all agencies were agreed upon, with coordination and direction of the over-all project assigned to personnel in the Division of Special Health Services, Public Health Service, Denver. Later, at a meeting of representatives of these agencies with the Joint Tribal Council at Wind River, the council approved the program and members of the Regional Office Special Health Services staff were designated to meet with the Joint Tribal Council Board of Health to discuss details of organization.

Printed material, radio and newspaper publicity were the media adopted for public promotion of the survey. At the request of the Tribal Council Board of

Health, each council member was responsible for preregistering persons living in his district, as had been done successfully during a previous tuberculosis survey. At the time of preregistration, a pamphlet describing the nature of the examinations, the date and hours of operation, and the location of the testing centers was given to each person for whom a registration card was prepared. Pamphlets were also given to each school child to take home. The two radio stations in the area were most generous in providing spot announcements. The Lander, Wyo., newspaper also provided several news items on the program.

Due to the nature of the examinations offered, it was decided to have testing centers at only two locations, Fort Washakie Clinic and Arapahoe Clinic which were readily accessible to an estimated 60 per cent of the reservation population. The adult (12 years of age and older) examination included chest x-ray for tuberculosis, heart disease and other chest pathology, blood tests for syphilis and diabetes, a rough hemoglobin test, physical inspection of male genitalia, and a height and weight check. All school children 6-12 were offered a chest x-ray.*

It was agreed that a complete and thorough, individualized pediatric evaluation of the children by board-qualified pediatricians, which included the social and emotional aspects of the child and his family, would be of most value to the Indian families and children. It would have greater validity in future program planning for them because the resulting data would not have the limitations of prior assumptions of morbidity on which a screening examination alone would be based. The sound health educational values would be greater than those in a multiple screening program for children. In addition to this complete pediatric evaluation, it was decided that the examination of selected children from 0-12 years of age would include chest x-ray, detailed blood examinations, serological tests for syphilis, rectal tapes for pinworm infestation, and stool examinations for other pathogens. Also considered essential was an explanation to the family of the findings as well as follow-up for correction of the problems or abnormalities found. This series of pediatric evaluations is the subject of this paper.

* The results of these portions of the program are available from the Denver Regional Office of the U. S. Public Health Service.

Method

The number of pediatricians available in the 11 days' time allotted for the health survey of the Wind River Indians did not permit complete pediatric evaluations of all children on the reservation. It was decided, therefore, to limit the evaluations to children 12 years of age or under, to examine children by family units, and to select the families in a random fashion from each of the school census rolls in order to obtain a similar distribution between tribes and by geographical location. Two pediatricians were available for six working hours on each of the 11 days, with an additional pediatrician for laboratory work and as an "emergency replacement." It was estimated that since some history data would be available from clinic and social service records at the time of the examination, additional pertinent data could be obtained and complete pediatric evaluation would then be possible for approximately 250 children. Since the average family was estimated to have three to four children under 12 years of age, 70 families were to be offered the pediatric evaluations. The families were chosen by selecting every fifth name on the school census rolls until 70 families were selected. Sixty families appeared for the evaluations.

The public health nurse assigned to

the Wind River Health Unit then personally contacted each of the families to give them an appointment for the evaluation and to explain what they could expect from the experience. This individualized, meaningful contact undoubtedly accounted for the excellent cooperation and acceptance by the families. The same public health nurse then reviewed the Wind River Health Unit medical records for any pertinent history which she recorded prior to the time of the survey. In addition the social service worker assigned to the Wind River Reservation included on the record any information which she had prior to the survey.

Seven pediatricians, all of whom were board certified or board eligible, participated in the examinations. One of these, a hematologist, was present throughout the entire period to lend continuity. He drew all the blood samples, calculated all the height and weight percentiles and assisted periodically in the examinations. Each physician recorded the pediatric history and the examination findings on a form especially prepared for this purpose by the Wyoming Health Department, the Children's Bureau, and the Public Health Service.

Much of the material from the charts, including the laboratory work, was coded and transferred to IBM cards from which tables were prepared. However, a great deal of the material included in the results was derived from a review of each chart by a pediatrician (Children's Bureau regional medical director) in order to verify opinions, diagnoses, and recommendations which required medical judgment. The charts were also reviewed by the Children's Bureau regional nursing consultant and regional medical social consultant for pertinent findings which appear in the results.

The preplanned follow-up with the families on the results of the examinations was carried out by the Wind River Health Unit.

Results

Characteristics of the children and their families: Distribution by age, sex, and tribe—Two hundred and fourteen children, aged 12 years and under, representing 60 families, received the pediatric evaluations. (It is estimated that there were about 1,400 children from both the Arapahoe and Shoshone tribes on the Wind River Reservation in September, 1957; 58 per cent of these were of the Arapahoe tribe, 40 per cent of the Shoshone tribe, and 2 per cent from other tribes.) Table 1 shows that the age distribution among the 214 children was remarkably similar with one-half of the children six years and under, the median age being six and one-half years. The sex distribution was approximately

Table 1—Age Distribution*

	Number	Per cent
Under 1 year	14	6.5
1 to 2 years	9	4.2
2 to 3 years	13	6.1
3 to 4 years	13	6.1
4 to 5 years	12	5.6
5 to 6 years	14	6.5
6 to 7 years	19	8.9
7 to 8 years	23	10.7
8 to 9 years	19	8.9
9 to 10 years	23	10.7
10 to 11 years	20	9.3
11 to 12 years	22	10.3
12 to 13 years	13	6.1
Total	214	99.9

* Age distribution was very similar in each tribe.
Median age was 6½ years.
Sex distribution was very similar in each tribe, about an equal number of each sex.
Fifty per cent were Shoshones, 48.6 per cent Arapahoes, and 1.4 per cent from "other tribes."

equal in both tribes as is the case in the general Wind River population. Fifty per cent of the sample were of the Shoshone tribe, 48.6 per cent Arapahoes and 1.4 per cent from "other tribes"; there were, therefore, more Shoshone children in the sample than in the general Wind River population.

Family characteristics — The largest number of children in this age group brought in for pediatric evaluation from one family was nine. The majority of families brought in two or three children (14 families brought in three and 15 families brought in two).

According to the information obtained at the time of the survey only 19 of these 214 children, representing nine of the 60 families, were living with persons other than their parents. Fifteen children (representing five families) were living with grandparents; three children (from three families) were listed as "adopted," two adopted by grandparents and one child living with foster parents.

In six of the 60 families, an adult member, who was directly or indirectly responsible for child care, had an illness or condition that could be considered significant as a health hazard (existing or potential) to the children in the family, or that was of such nature that it could influence the quality of care given to the children. For example, a mother of three children had a diagnosed gastric ulcer with anxiety neurosis for whom psychiatric treatment was recommended but not secured. In another family, there was a father with active tuberculosis, who had been in and out of a tuberculosis sanitarium, usually leaving "against medical advice"; there were also three other families with untreated tuberculosis in the household.

Accuracy of the information received by the pediatricians—For the most part, the medical and social backgrounds of the families had been obtained over a period of time by professional people working with the Indian children and their families. However, each pediatrician was asked to estimate the reliability of the information secured about each child during his own interview with the relatives and the children. These were recorded as poor, fair, or good. For 37 per cent of the children the accuracy of the information was considered good, for 41 per cent fair, and poor for 21 per cent (only two cases or 1 per cent had no data as to reliability). Although the examining physicians considered the information supplied by members of the Shoshone tribe to be less reliable on the whole than that from the Arapahoe tribal members, the Shoshone Indians as a group are considered to be less communicative and, by our standards, more "shy." This fact undoubtedly accounts for the discrepancy, but it is an important cultural factor to be considered in obtaining a complete and valid pediatric history. At the same time, the fact that non-Indian doctors could obtain a "fair" to "good" history on 78 per cent of the children in an Indian population makes this "sine qua non" of a pediatric evaluation a worth-while inclusion.

Relatives accompanying the children during the examination—All children were accompanied by an adult during the pediatric evaluation. Sixty-seven per cent were accompanied by the mother only; 25 per cent by both parents, 3 per cent by the father only, and 5 per cent by some other relative or guardian. Among children of the Shoshone tribe there were a few more who were accompanied by both parents and a few more accompanied by other relatives or guardians than among the Arapahoes. This family participation was one of the most valuable results of the evaluation and planning it as an integral part of future programs is valid. Furthermore, a successful method of making a meaningful contact with the adult population is suggested.

Analysis of the findings of the pediatric evaluations: Height and weight

percentiles—Table 2 shows the distribution of the height and weight percentiles obtained on the children by sex and by tribe. The percentile charts used were from the Colorado State Health Department and are a composite of those compiled in various parts of the country. This table shows that in both sexes of both tribes, the Indian children are similar in weight to those from which the percentile tables were made. However, in height these children are considerably smaller, the median height falling between the 25th and 29th percentiles. The females of both tribes appear to be somewhat lower in both height and weight for their ages than non-Indian children, in that the median percentiles were between the 40th and the 44th. The males of both tribes were similar in weight to non-Indian children but were smaller in stature, with the median height between the 30th and 34th percentiles. Probably of more significance is the fact that the children from the Arapahoe tribe are very similar in their height and weight development to non-Indian children: the median for weight was between the 50th and 54th percentile and the median for height between the 45th and 49th percentiles. On the other hand, the Shoshone children appear to be considerably smaller and also slightly lighter than non-Indian children since the median for height fell in the 15th to 19th percentile and that for weight in the 40th to 44th. In examining the sex distribution of this difference among the Shoshone children, it was found that the majority of those falling in the lower percentiles were males although the difference in number did not appear to be of much significance. In summary, then, the Arapahoe Indian children appear to be of similar height and weight to non-Indian children but the Shoshone group are considerably shorter and weigh somewhat less than their non-Indian counterparts. The presently available height and weight growth charts should therefore be used with some caution; more dependence being placed on the individual's own rate of growth than on comparing him with the

Table 2—Number of Children with Specified Height and Weight Percentiles

	Both Tribes*						Arapahoe		Shoshone	
	Male		Female		Both Sexes		Both Sexes		Both Sexes	
Percentile	Weight	Height	Weight	Height	Weight	Height	Weight	Height	Weight	Height
No data	4	9	10	14	14	22	4	8	10	14
5–9	–	–	1	–	1	–	1	–	–	–
10–24	23	48	22	35	45	83	21	25	22	55
25–49	29	25	21	19	50	44	25	25	24	18
50–74	27	17	25	23	52	40	27	23	25	17
75–89	14	5	9	11	23	16	11	14	12	2
90–94	12	5	17	4	29	9	15	8	14	1
Total number with data	105	100	95	92	200	192	100	95	97	93
Total children	109		105		214		104		107	
Median percentile	50–54	30–34	40–44	40–44	45–49	25–29	50–54	45–49	40–44	15–19

* Includes three females from "other tribes."

Table 3—Summary of Numbers of Children (Unduplicated Count) Requiring Follow-up and Kind of Follow-up Care Indicated

	Total	No Follow-up	Immunization Only*	Dental Care Only	Medical Only		Immunization and Dental	Immunization and Medical		Dental and Medical		Immunization Dental and Medical	
					With Parasites	W/out Parasites		With Parasites	W/out Parasites	With Parasites	W/out Parasites	With Parasites	W/out Parasites
Total	214	13	19	24	9	17	21	14	17	25	33	11	11
Medical problems in addition to parasites					4			6		15		3	
Parasites the only medical problem					5			8		10		8	
Total	214	13	19	24	26		21	31		58		22	

Total Kinds of Follow-up Required: Total requiring follow-up of some kind 201
Immunization* 93
Dental Care 125
Medical Care 137

Medical care without pathogenic parasites 78
In addition to pathogenic parasites 28
Pathogenic parasites the only problem 31

* Smallpox vaccination alone not included. See Table 8.

percentile worked out for non-Indian children. This would be particularly true among the Shoshone Indians.

Six of the children examined were stated to have been born prematurely with an average birth weight of slightly over four pounds. No significant relationship could be established between prematurity and their present growth status or health problems.

Medical and dental needs: General—Table 3 gives a summary of an unduplicated count of the number of children requiring follow-up and the kind of care which was indicated. There were only 13 children who required no follow-up of any kind. An additional 19 required follow-up for either initiation or completion of immunizations without need for additional care. (Of the 19, there were several who also required well-child supervision but since this is considered essential for all children it was not tabulated as a specific follow-up need.) There were, therefore, 201 children who required follow-up of some kind: 19 required immunization only; 24 for dental care only; 26 for medical care only, 21 for both immunization and dental care; 31 for immunization and medical care; 58 for dental and medical care; and 22 for immunization, dental and medical care.

By the types of follow-up required, it was determined that 93 children needed immunization (the need for smallpox vaccination alone is not included in this group); 125 required dental care; and 137 required some kind of medical care. Among the 137 requiring medical care, pathogenic parasites (the majority of which were intestinal) were the only problem in 31 children; medical problems in addition to pathogenic parasites were present in 28 children; and in 78 children there were medical problems without the presence of parasites. Therefore, there were 106 children with medical problems exclusive of pathogenic intestinal parasites.

Medical needs—Table 4 gives in some detail the diagnoses which were determined through the pediatric examination and the history, with the exception of diagnoses relating to intestinal parasites and to dental problems. Only those diagnoses which require treatment or follow-up were recorded here. There were 106 children with 178 diagnoses. The number one reason for recommending medical follow-up was otitis media. The majority of these were chronic and without perforation. There were 37 children with either chronic or acute otitis media, of whom 13 (35 per cent) had a possible, and three (8 per cent) a definite hearing loss. The second most prevalent problem was visual defects which included abnormal vision as well as obvious strabismus. There were 19 orthopedic abnormalities excluding congenital abnormalities of the bones or muscles, of which 12 were diagnosed as knock-knee and pronated ankles severe enough to require treatment. It was of interest that among these 214 children there was only one congenital dislocation of the hip, which had already been corrected, in contrast with the high prevalence of this congenital abnormality among the Navajo Indians. Of the cases of congenital heart disease found, there was one patent ductus arteriosus which had been corrected but there were two possible interventricular septal defects. There appeared to be a suggestively high incidence of convulsive disorders as presented by the history, five (2.3 per cent) having been noted. Although three of these were considered to be "febrile" in character, they certainly deserve further investigation. Among the metabolic, nutritional, or endocrine disorders, there were seven children whose obesity was severe enough to require some therapy. It was also of interest that cryptorchidism was present in four children.

There were 16 children who had infections other than intestinal parasites, otitis media, or tonsillitis: seven of these cases were skin infections, all but one of which were apparently amenable to treatment. Of significance here is the low incidence of apparent conjunctivitis and possible trachoma.

The incidence of congenital abnormalities is also of interest in that there were seven children with a definite congenital abnormality and two with possible congenital heart disease (the findings as recorded in the charts lead one to believe these were more probable than possible cases). Nine children out of 214 gives an incidence of 4.2 per cent.

There were 18 "other" positive medical findings of varying nature, two of these being probable mental retardation.

The pediatricians were asked to give an impression of the intelligence of the children at the close of their examination. We realize that this may well be very inaccurate because of the difference in cultural backgrounds, but most of the pediatricians made their estimation on physical and emotional responses rather than on verbal ones. They were asked to judge whether the child was low, average, or above average. An evaluation was given for 189 of the 214 children. Of these, 148 were considered to be average, 15 above average, and 16 low. On such a gross evaluation as this, these findings would seem to be comparable to those found in a non-Indian population. It was of interest that the distribution by age showed no remarkable variation, which lends validity to the findings. The distribution between tribes and between sexes was remarkably similar.

Although not considered an abnormality, it was remarkable how few functional murmurs were noted. Only 14 were reported, an unusually low incidence. It may be observed, however, that in one case, although designated as a functional murmur with the description certainly fitting one, the x-ray of the heart indicated an abnormal size and shape.

Table 4—Diagnoses Determined by Pediatric Examination and History (Excepting Intestinal Parasites and Dental Problems) Requiring Treatment or Follow-Up (106 Children with 178 Diagnoses)

1. Ear and Hearing Problems	64			
Otitis Media		37		
With perforation			6	(1 with possible mastoiditis)
W/out perforation			22	
With tonsillitis			9	
Hearing loss		26		
Possible			13	
Definite			3	
2. Visual Defects (including myopia, strabismus)	23			
Uncorrected		16		
Corrected but requiring follow-up		7		
3. Orthopedic abnormalities (other than congenital abnormalities)	19			
Knock-knee and pronated ankles		12		
Pronated ankles alone		2		
Multiple muscle and bone abnormalities		1		
Spastic quadriplegia (post encephalitic)		1		
Tibial torsion and internal rotation of hip		1		(with possible postinfection of knee)
Bowed legs		1		(1½ years of age)
Possible rickets		1		(2½ years of age)
4. Congenital Abnormalities	9			
Congenital heart disease		3		
Definite (patent ductus arteriosus)			1	(corrected)
Possible (IVSD)			2	
Urinary tract abnormality		2		
Phimosis			1	
Congenital stenosis external meatus			1	
Absence of external auditory canal		1		
Hammer toes		1		
Syndactylism		1		
Congenital dislocation of hip		1		(corrected)
5. Infections (Other than intestinal parasites, otitis media with and without tonsillitis)	16			
Skin infections		7		
Ringworm			3	
Pyoderma			1	
Scabies (possible)			2	
Dermatitis, unknown cause			1	
Tonsillitis		3		
Possible pulmonary infection		2		
Possible bronchiectasis			1	
Possible pneumonitis			1	

Table 4—Diagnoses Determined by Pediatric Examination and History (Excepting Intestinal Parasites and Dental Problems) Requiring Treatment or Follow-Up (106 Children with 178 Diagnoses)—continued

Infections (Cont.)			
Vaginitis		2	(1 with parasites)
Conjunctivitis		1	
Urinary infection (possible)		1	
6. Metabolic and/or Nutritional, Endocrine Disorders	16		
Obesity		7	
Cryptorchidism		4	
Malnutrition		2	
Possible precocious sexual development		1	
Underdeveloped genitalia		1	
Possible prediabetic		1	(see Table 5 on Medical Findings from Charts)
7. Convulsive Disorders	5		(one 1½ years, one 9 years, 3 history of "febrile")
8. Chest X-ray Abnormalities	8		
Possible cardiac abnormality		4	(3 with normal physical findings)
Possible tuberculosis		3	(1 "urgent follow-up")
Mediastinal mass		1	
9. Other Abnormalities	18		
Enuresis		3	
History of acute rheumatic fever		3	(2 very doubtful)
Allergic rhinitis		2	
Probable mental retardation		2	(1 with hearing loss to be ruled out)
Inguinal hernia		2	
Umbilical hernia		1	
Ecchymosis		1	
Emotional immaturity		1	
Possible premature closure of cranial sutures		1	
Extremely poor hygiene		1	
Possible ataxia		1	
Functional murmurs	14		(1 with x-ray abnormality of heart)

Table 5 indicates some rather interesting findings which were obtained from the histories in the charts and are in addition to diagnoses obtained from the pediatric examination and history. The information related to the child examined, and indicated that there were an additional six children with a history of otitis media whose ear drums could not be visualized. There were also eight children who had had recurrent diarrhea significant enough to be noted in the chart (most of these required hospitalization or repeated medical care).

Probably of more interest were medical findings in the family history which were of significance for the children. There were three families in which there was a history of the mother having had babies of high birth weight (eight lbs or over). Since this has been shown to indicate a possible prediabetic mother and therefore possibly prediabetic children, follow-up is indicated. In another family both parents had been diagnosed as diabetic and the children, therefore, require close follow-up. In two families there was a history of rheumatic fever

Table 5—Medical Findings Obtained from Histories in the Charts (in Addition to Diagnosis from Pediatric Examination and History)

History of Significance in the Child Examined:	
Premature birth	6 children
Recurrent diarrhea	8 children
Malnutrition treated in hospital	2 children
History of earaches, running ears, ears not visualized because of cerumen	6 children
Untreated conjunctivitis	2 children
"Boils"	1 child
"Twitching"	1 child
History in the Family of Significance to the Children:	
History of mother having babies of high birth weight (8 lbs or over)	3 families
(Family No. 39—2 children examined; B.W.: 9 lb and 10 lb 11 oz)	
(Family No. 47—6 children examined; B.W.: 9 lb 15 oz, 8 lb, 10½ lb, over 8 lb)	
(Family No. 57—5 children examined; B.W.: 11 lb, 8 lb, 9 lb)	
Both parents diabetic, 4 children not checked for diabetes (Family No. 44)	1 family
History of rheumatic fever in family	2 families
Mother of 4 children recently treated for rheumatic heart disease (Family No. 32)	
11-year sibling died 1944 of rheumatic fever	
Unusual number of deaths of siblings (One with 4, one with 5, not all known causes)	2 families
Mother with unusually high perinatal losses apparently due to congenital abnormalities	1 family
Untreated tuberculosis in household with possible or probable exposure	4 families

which appeared to be definite. There were three families in which intensive prenatal care seemed indicated merely from the history; in two families there were an unusual number of deaths of siblings of the child examined—not all of the causes of which were known; in another the mother had what appeared to be an unusually high perinatal loss, due apparently to congenital abnormalities. It is of interest that in nine out of 70 families, examination of the family chart alone proved significant in finding potential cases for preventive medical care.

Only six of the parent-doctor interviews revealed problems of emotional significance—one child was described as having "temper tantrums"; one as being "nervous" (11½-year-old girl); three children from different families had enuresis; and one three-year-old was described as a "breath holder." In view of some of the apparent family social problems this seems remarkably low, and may well be due to communication based on a one-time contact.

Dental needs—Table 6 was tabulated by a different method than was Table 3 but indicates a similar number of children requiring dental care, that is 135. It is of interest how equally distributed these are with respect to both tribe and sex. Most of these dental needs were related to dental caries, but many notations were made of serious malocclusion.

Since these examinations were done by pediatricians and not dentists, the incidence of malocclusion was not considered valid enough to tabulate. A special follow-up program of family dental care by the Indian Health Service on the reservation for these children has been remarkably successful.

Immunization needs—Table 7 indicates the number of children with a history of previous immunization for specified diseases by age. The immunization of this group of children is alarmingly low considering that only 53 per cent have had complete DPT immunization and only 36 per cent are protected against smallpox. This child population group is also inadequately protected against poliomyelitis (the discrepancy between this table and Table 3 is that smallpox vaccination alone as a need was not considered in Table 3, but the need for boosters for DPT was tabulated). Of particular significance is the high number of preschool age children with either only partial or lacking DPT immunization.

Table 6—The Need for Dental Care Among Children Given Pediatric Examinations, by Tribe and Sex

Tribe and Sex	Recommendations: Not Needed	Recommendations: Care Recommended
Arapahoe		
Total	41	63
Male	23	29
Female	18	34
Shoshone		
Total	38	69
Male	20	37
Female	18	32
Other Tribes		
Total	–	3
Male	–	–
Female	–	3
All Tribes		
Total	79	135
Male	42	66
Female	36	69

Intestinal parasitic infections—Examinations of stool specimens and rectal tapes were made by an experienced parasitologist. Two hundred and twelve rectal tapes and 70 stool specimens were examined; 21.2 per cent of all the children were found to have pinworn ova. (This represented 16.5 per cent of the Arapahoe children and 23.6 per cent of the Shoshone children.) The majority of these in both tribes were in the five-to-nine-year-age group. The type of parasites found by stool analysis is presented in Table 8; 20 per cent of the children had pathogenic intestinal parasites. The majority of these were among children of the Arapahoe tribe. Among this group the numbers in the preschool age and in the school age groups seemed to be equal in contrast to the larger number of school age Shoshone children.

Other laboratory findings — Hemoglobin values were obtained on 199 of the children and contrary to what was expected, only seven were below ten milligrams per cent. The median values and the distribution in each tribe by sex were essentially the same.

Hematocrit determinations were done on 195 children. The distribution of corpuscular value per cent was essentially normal, with the median value 390 per cent. Again the distribution by sex and between the two tribes was essentially similar. Only two children were found to have abnormal hemoglobin type, in both cases hemoglobin-D. They were brothers whose racial inheritance was considerably mixed with groups other than Indian, so that the significance of the finding is doubtful.*

* By Dr. John H. Githens, associate professor, and Dr. Henry Knock, former research fellow, University of Colorado Department of Pediatrics.

Table 7—Number of Children with History of Previous Immunization for Specified Diseases by Age

Kind of Immunization	Less than 1 year	1	2	3	4	5	6	7	8	9	10	11	12	All Ages
DPT														
Completed	1	3	3	5	7	10	10	15	10	15	15	13	7	114
Partial	2	2	4	4	2	2	6	5	5	4	0	5	2	43
Not done	11	3	6	4	3	2	3	3	4	4	5	4	4	56
Smallpox														
Done	0	1	3	5	4	5	6	8	7	9	10	13	8	79
Not done	14	8	10	8	9	9	13	15	12	14	10	9	9	135
Poliomyelitis														
Completed	0	1	2	3	3	6	5	10	6	12	13	10	2	72
Partial	0	2	4	5	4	4	10	10	6	6	7	6	5	69
Not done	14	6	7	5	6	4	4	3	7	5	0	6	6	73
Rocky Mountain Spotted Fever														
Done	0	1	–	1	2	4	7	16	15	17	18	18	8	107
Not done	14	8	13	12	10	10	12	7	4	6	2	4	5	107

Serum protein values obtained by electrophoresis on these children showed a remarkable similarity, although there were a few significant deviations. However, more normal values must be obtained before conclusions relating the serum protein values and infections can be reached. The results of this study are to be published later.*

Table 4 showed the results of the chest x-rays. There were eight apparent abnormalities found, three of which were possible tuberculosis (one of these was considered to be severe enough for "urgent follow-up"), four were considered to have possible cardiac abnormalities although three of these had normal physical findings (one of these was the case, who, on physical examination, was said to have had a "functional murmur"). One child showed a mediastinal mass.

* By Dr. Donough O'Brien, assistant professor, University of Colorado Department of Pediatrics.

Summary and Recommendations

The cooperation of the Indian families and children of the Wind River Indian Reservation was remarkably good. Their eagerness for pediatric evaluations was evidenced by the response to the services offered.

In general, their problems seemed to be similar to those of non-Indian groups of similar socioeconomic status. One of their great needs is assistance with their social problems. Despite the high prevalence of such difficulties, there were fewer emotional problems in the children as described by the parents than one might expect. It is possible, however, that more intensive medical social work with these families will bring out problems which were not evident during these evaluations.

One of the greatest needs of this group of children is dental care. This is true in spite of the fact that dental care has been available to them for some time

in the clinic on the reservation. Probably, as with non-Indian families, what is necessary is education on the need for early and frequent dental care with much emphasis on prevention of dental caries. (The high potential for success has been borne out by the current dental care follow-up program.) The next most pressing problem appears to be that of well-child supervision as evidenced by the low level of immunization of the population. The hemoglobin and hematocrit determinations would indicate that the nutritional status of these children is fairly good. It would be helpful to have some indication of the ascorbic acid levels among these children because of the high incidence of upper respiratory infections. The serum protein findings may, in the future, prove to be very pertinent to this. Abnormal hemoglobin types do not appear to occur to any significant degree in these tribes.

The greatest medical need concerns the large number of cases of otitis media. This is no doubt dependent on the prevention and prompt treatment of upper respiratory infections, which in turn involves health education regarding the need for early treatment of such illness. As already indicated, a more

Table 8—Type of Parasites Found by Stool Analysis—Total Specimens Examined and Parasites Found by Tribe and Age

Tribe	All Ages		Age Group			
	Number	Per cent	Under 1	1–4	5–9	10–14
Total Specimens Examined	70	100.0	5	20	29	16
Pathogenic Parasites	14	20.0	1	7	6	–
Endamoeba histolytica	3		–	1	2	–
Giardia lamblia	11		1	6	4	–
Nonpathogenic Parasites	17	24.3	–	6	5	6
Endamoeba coli	10		–	4	3	3
Endolimax nana	4		–	1	1	2
Chilomastix mesnili	2		–	1	–	1
Iodamoeba buetschlii	1		–	–	1	–
Arapahoe—Specimens Examined	40	100.0	3	15	16	6
Pathogenic Parasites	12	30.0	1	6	5	–
Endamoeba histolytica	3		–	1	2	–
Giardia lamblia	9		1	5	3	–
Nonpathogenic Parasites	12	30.0	–	5	2	5
Endamoeba coli	7		–	4	1	2
Endolimax nana	4		–	1	1	2
Chilomastix mesnili	1		–	–	–	1
Shoshone—Specimens Examined	30	100.0	2	5	13	10
Pathogenic Parasites	2	6.7	–	1	1	–
Giardia lamblia	2		–	1	1	–
Nonpathogenic Parasites	5	16.7	–	1	3	1
Endamoeba coli	3		–	–	2	1
Chilomastix mesnili	1		–	1	–	–
Iodamoeba buetschlii	1		–	–	1	–

Table 9—Hemoglobin Values, by Age*

Age in Years	Number Tested	Number Below 10 mg Per cent
Less than 1 year	10	1
1	9	3
2	11	–
3	13	–
4	11	–
5	14	–
6	18	1
7	22	–
8	18	1
9	20	–
10	18	–
11	21	1
12	13	–
All Ages	199	7

NOTE: Blood pressure was taken on 183 of the 214 children. None were found to be abnormal.

* The distribution was essentially the same in each tribe and for each sex.

detailed analysis of nutritional status may be of significance in the incidence of these infections.

Visual defects which are uncorrected are also relatively high and probably require more emphasis on the preschool-age period.

The high incidence of pathogenic parasitic infection requires special attention particularly because of its secondary effects on nutrition and the effect on the potential for growth in children.

In general, the children appear to be somewhat shorter than their non-Indian counterparts. This is particularly evident among the Shoshones who are slightly lighter and considerably shorter than non-Indian children. This would indicate that individualization of growth history will be necessary until such time as some comparable findings are made for the individual tribal height and weight growth curves.

Time spent in reviewing previous medical, nursing, and social service findings is a valuable and productive prelude to evaluation as well as a good case-finding method for preventive medical care.

This method of selecting children for a sample appears to be excellent. Similarly, the method of obtaining acceptance and cooperation of the Indian families is a successful one. The method of obtaining an overview of the problems of the Indian groups is also productive. It may be that, by offering similar complete evaluation and follow-up services to other groups, entree can be gained to adults for determination of their problems and for enlisting their cooperation in health programs.

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A study was carried out with a group of Indian children to see whether prophylaxis of otitis media could be instituted. A long-acting sulfonamide and the results of this pilot demonstration are reported below. Some aspects of a more precise study design are discussed by the authors.

PROPHYLAXIS FOR OTITIS MEDIA IN AN INDIAN POPULATION

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THE LARGE NUMBER of draining ears and earaches in Indian children caused us to seek a prophylactic. It seemed that a sulfa drug would be the most satisfactory. We believed that Sulfamethoxypyridazine, a long-acting sulfa drug manufactured by Lederle Laboratories under the trade name of Kynex would be acceptable.[1] The Lederle Laboratories furnished the drug and assisted in suggestions for dosage. The Research Laboratory of the Montana Deaconess Hospital of Great Falls, under the direction of Dr. Ernst Eichwald, ran the blood sulfa determinations and bacterial sensitivity tests; the Montana State Board of Health Laboratory, under Edith Kuhns, also did some of the sensitivity tests.

It was decided to give Sulfamethoxypyridazine to all children who had not reached their 11th birthday by November 1, 1957. It was planned to give it from that date until June 1, 1958. Actually, two were included who were 11 shortly before that date. A history of draining ears or earaches in previous years was taken. In the Montana climate earaches of short duration, which are not considered to be otitis media, occur due to exposure to cold. To rule out this condition, an earache was defined as one which lasted all night. Here otitis media is used to denote an infection of the middle ear, resulting either in draining ears or in an earache of one night's duration.

The small number of children and the uncertainty of how many would carry out the program made a control program unfeasible. It was felt, however, that other patients on the welfare medical rolls or those who did not continue the medication could constitute a control group. A questionnaire was filled out on 130 non-Indian children of the same age group who were on the welfare medical rolls to serve as a control group. Although the incidence of draining ears in the control group was one-third less prior to the study year, it was felt that this would not detract from the value of the control group as long as this was kept in mind.

Since many of the Indian population were on the medical welfare program, these groups are somewhat comparable.

The following dosage was used Monday, Wednesday, and Friday:

Weight Pounds	Tablet	Syrup Teaspoon
20– 40	¼	½
40– 60	½	1
60– 80	¾	1½
80–100	1	2
100	1¼	2½

Less than 20 lbs—½ tsp. twice a week

Although it was known to err on the low side, for the sake of safety, it was hoped that it was sufficient to maintain blood sulfa levels of 5 to 15 mg per cent as total sulfa.

Results

The public health nurse in the district became seriously ill and was incapacitated after April 25, so the program ended five weeks earlier than was originally planned.

One hundred and twenty-four children were in the study. Ninety-five of these had not had draining ears previous to the study. Twenty-nine, or 23 per cent had had draining ears previously, while 14.6 per cent of the control group had not previously had such a condition. It seemed logical to divide the study group into two parts; viz. (A) without previous draining ears, and (B) with previous draining ears. Of the 95 without draining ears previously, four moved and could not be followed.

A. Of 91 without previous draining ears who could be followed (see chart):

Thirty-four or 37 per cent took the medication regularly until April 25. None had draining ears or earaches.*

Fifteen took the medication irregularly.† There were none with draining ears and one with an earache, or about 7 per cent. (The latter child very seldom took it; in fact so seldom that we considered placing him in the group not taking the medication.)

Thirty-six stopped medication before April 25. There were two with draining ears and six with earaches, or 22 per cent with some type of otitis media; but none occurred less than two weeks after stopping.

Six did not take the medication at all. Two had draining ears, or 33 per cent.

In the control group, of those without previous draining ears, 7.2 per cent had draining ears this year (1958).

B. Of the 29, in the study group, with draining ears in previous years, 16 had had several repeated draining ears and four had them in two different years. Nine had draining ears in only one year, but five of these were less than two years old, so there was no opportunity for the experience of a second winter. The results this year (1958) are as follows:

Eighteen took the medication regularly; 15 had no otitis media this year; three had drums that had been destroyed or mutilated, and a chronic mixed infection. (Mothers reported an improvement over previous years.)

Three took medication irregularly, none with draining ears, or earaches.

Seven stopped medication before April 25. There were three with draining ears, one of whom had no ear drum. There were two with earaches; one of these took the medication only when the ear ached, not otherwise. All symptoms in this group occurred several weeks after medication was stopped.

One did not take medication and had no otitis media this winter. In the study group 14 per cent of those with draining ears previously had them this year, compared to 63 per cent in the control group.

If we then consider the 19 who had otitis media this year (1958), we find:

Three took Sulfamethoxypyridazine regularly. All three had previously mutilated or destroyed drums, showed mixed infections, and had had continuous drainage most of their lives. One of these had drainage lessened in amount, one had one earache and was fretful, and one pulled at her ears which had a foul odor, but no visible drainage. All three were small children who had had rather severe lead poisoning the previous spring. The family of the two children without drainage had not been

* This includes four who were out of medication for eight days, but took it conscientiously before and after this period.

† Those who continued to take the medication occasionally throughout the program, and did not go without the medication more than two weeks.

completely deleaded, and adult members complained of severe muscle and gastro-intestinal pains. This condition rather than the ear could have caused the irritability.

One took the medication irregularly and had earaches but no drainage.

Thirteen stopped taking medication from two to several weeks prior to the onset of otitis media. Five of the 13 had draining ears. Eight simply had earaches. Three of the five with draining ears had had them in previous years, one of whom had previously destroyed drums.

Two took no medication and had draining ears.

Breaking this down further into eight who had draining ears and 11 who had earaches, we find:

Of the eight who had a draining ear this year (1958):

One took Sulfamethoxypyridazine regularly, but had both drums destroyed previously and a mixed infection, as well as a previous lead poisoning.

Five stopped taking the medication two to several weeks prior to the onset of draining ears; three had had drainage previously.

Two did not take the medication at all; neither had had draining ears previously.

Of the eleven who had earaches only:

Two took the medication regularly. They had mixed infections, mutilated drums, and had had previous lead poisoning. One had one earache. The cases were doubtful because symptoms may have been due to incompletely treated lead poisoning.

One took the medication irregularly; it was noted as "very seldom," and possibly should have been in another group.

Eight stopped taking the medication. One of these took it only when he had earaches and possibly should have been placed in the group that was not taking medication. Since he had had draining ears previously, one might surmise that the medication prevented the drainage.

Table 1—Prophylaxis for Otitis Media in an Indian Population

Those Without Draining Ears in Previous Years

Groups	No.	Per cent	Otitis Media This Year		Earache Only		Draining Ear	
			No.	Per cent	No.	Per cent	No.	Per cent
Total Study Group	91	100	11	12	7	8	4	4
Took regularly	34	37	0	0	0	0	0	0
Took irregularly	15	16	1	7	1	7	0	0
Stopped taking	36	40	8	22	6	17	2	5
Did not take	6	7	2	33	0	0	2	33
Control Group	111	100	14	13	6	5	8	7

Those with Draining Ears in Previous Years

Groups	No.	Per cent	Otitis Media This Year		Earache Only		Draining Ear	
			No.	Per cent	No.	Per cent	No.	Per cent
Total Study Group	29	100	8	28	4	14	4	14
Took regularly	18	62	3	17	2	11	1	6
Took irregularly	3	10	0	0	0	0	0	0
Stopped taking	7	24	5	71	2	28	3	43
Did not take	1	3	0	0	0	0	0	0
Control Group	19	100	12	63	0	0	12	63

In addition to the statistical data, there are related incidents which should be mentioned. The Welfare Medical Service and two of the otologists in Great Falls reported a greater incidence of otitis media in the rest of the population than they had seen in several years.

Fairly early in the winter the Medical Welfare Service noticed an improvement in Indian health conditions. In previous years, Indian medical care had consumed the major part of the medical funds. During this winter, Indian medical care was only a negligible part of the total Welfare Medical Service load. The Service reported that not nearly as many Indian children were coming to their outpatient clinics for ear infections as there had been in years before.

In one family of six children, the oldest child was over the age limit for the program, and, through a misunderstanding, the youngest child, an infant, was not placed on the medication. In this family the oldest boy and the infant developed a draining ear, but none of the other four children had an earache. The infant was placed on Sulfamethoxypyridazine immediately; afterwards it had no more trouble.

Some of the comments of the mothers were very enthusiastic. The mother of one child who had had a draining ear several times a year almost the year around stated, "The running ear cleared up within two weeks after the medication given and he has had no trouble since." Another commented, "He has taken Kynex all winter and has not been sick." The mother of a 15-month-old youngster whose four siblings had all had earaches commented, "Has been taking Kynex all winter and has had no earaches."

There are some areas in which there may have been errors which we should point out. First, had this been a better controlled program, we should have made only one change, which would have been the establishment of the Sulfamethoxypyridazine program. However, with the usual zeal of public health persons, several other health programs had been started in the Indian population six or seven months prior to this program and were still being carried on. Some of these programs were Child Health Conferences, health education on nutrition and tuberculosis, improvement of the water supply, and a discovery of about 25 children and several adults with lead poisoning due to the burning of battery boxes. These programs may have had some effect in reducing the incidence of ear infections, but probably not as great as the medication itself.

Second, there was one failure in that only 43 per cent of the persons continued the medication until the end of the program. Part of this was due to our inability to lighten the load of the nurse working on this particular project, so that she not only had people with different customs and a new project, but also a district as large as any of the other nurses. If we were to repeat this, it is possible that the nursing load could be reduced. We would also carry on group education among the school-age children.

Third, we would more carefully determine the blood levels and the minimum dosage that might be given. The blood sulfa levels which we obtained were generally very much lower than we expected. Only a few determinations were made and the chief concern was to see that the levels were not too high. Instead of achieving levels between 5 and 15 mg per cent total sulfa, we found levels closer to 2 mg or even less. It may be that this small amount is all that is necessary to prevent otitis media. This is something to be investigated further.

Fourth, we purposely did not use controls among the Indian population. If this program is repeated, we hope it will be possible to obtain such controls. The Indian mothers who participated in this

program have been so enthusiastic about the results that they probably could not be persuaded to have their children serve as controls. There are a few Indians living in other parts of the city who might serve as controls. However, the Medical Welfare Service which has been watching the results, has become so convinced that it is considering placing all of its clientele on such a program next year, so it may not be possible to obtain controls in that group.

Throughout this study, one point was stressed which should not be overlooked. The use of the medication was not allowed to substitute for an adenoidectomy to prevent otitis media if such surgery was indicated. The one difficulty is that there seems to be much disagreement among experts as to when an adenoidectomy is indicated.

No toxic effects of Sulfamethoxypyridazine were observed in the dosage used.

Summary

A study was made of the prophylaxis of otitis media through the widespread use of Sulfamethoxypyridazine (Kynex).

In children who had not had draining ears previously it was shown to be completely successful if taken regularly according to the dosage schedule used. None of the study group who took the medication regularly had earaches or draining ears, but 12.6 per cent of the control group without previous draining ears had otitis media this year.

It was shown to be successful in preventing otitis media in children who had had draining ears, provided the drums had healed.

In children where the drums were destroyed or badly mutilated it is less successful, but has proved valuable in a small number of cases in suppressing drainage.

Although the study group had had one and a half times as many children with draining ears in previous years as the control group, in the year the study was done the entire study group, whether or not they took the medication regularly, had only 6.6 per cent (8 of 120) with draining ears, while the control group had 15 per cent (20 of 130).

Sulfamethoxypyridazine should not be used as a substitute for an adenoidectomy when one is indicated.

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It is not often that history is recorded as it is made. All the more welcome is the following review of the development of the cleft palate team, which records information which is otherwise difficult to get together.

THE CLEFT PALATE TEAM—A HISTORICAL REVIEW

Herbert R. Kobes, M.D., and Samuel Pruzansky, D.D.S.

THE STORY of the Cleft Palate Team is not an easy one to tell because we cannot find references in the literature to many important events. Also, we write necessarily in terms of the prejudices and knowledge that we have. This story cannot be put together like the interlocking picture puzzles, which are complete units once the various parts are all put into their proper places.

We believe that a number of factors originally not related to each other have over a period of years brought their influences to bear so as to produce what is now rather familiarly called the Cleft Palate Team. Let us not delude ourselves into believing that this team is a single kind of apparatus which has only one form or even one way of operating. It is more akin to the modern automobile, which is now produced in a variety of shapes, sizes, and colors.

About 1930 we can note at least four factors which together or separately have had a notable influence toward producing changes in the care of people with cleft palates. Probably, some others might be found. The factors are:

1. the concept of the whole child,
2. the study and application of knowledge about growth and development,
3. the inadequacies arising out of the rigid compartmentalization developing in specialty medical practice, and
4. the use of the team to deal with complex medical problems.

The 1930 White House Conference developed the first two to a great extent. These are closely interrelated as are also the second two. As we proceed to point out some of the historical highlights of approximately the last three decades, let us keep these four factors in the back of our minds so that from time to time we may recall their influence.

Let us dwell for a moment on the bias referred to above. A picture of bias or provincial type of attitude can be gained by quickly glancing at the list of bibliographical references attached to several papers on the same subject coming from different centers located in different parts of the country. There is usually a pattern of references which build up the writer's own philosophy and a complete omission of references to other but equally well-known authorities. This is noteworthy in the papers written by the leaders in the field of the cleft palate anomaly. One's experience and prejudice influence the writing of even scientific papers.

Another factor to which we may point is that reference is most commonly made to the particular specialized journals which are close to the writer, while omissions are notably from the fields remote from his dominant interest. Note, for instance, in the cleft palate field the frequency of referrals to dental papers by the dentists and an almost complete

absence of such references by many of the surgeons. The speech field is fortunate in that both the dental and surgical fields refer to the speech literature. Another form of provincialism is geographic. One notes lack of reference to papers emanating from writers working in a distant area. Chicago papers do not seem to be known to those who write in the East Coast area and the reverse is also true. We mention these factors because they had a real, though often poorly recognized, effect on the development of current thinking and action in the cleft palate field.

The passage of the Social Security Act in 1935 gave impetus to a nationwide interest in the care of children with clefts. Through Part II of Title V of this act, Crippled Children's Programs were set up in all the states and territories. Of course, many states had such programs before 1935, but the pattern in that year was one which made medical care and related services widely available to children with orthopedic difficulties. For a number of years, Dr. Herbert Cooper[1] carried on a vigorous crusade in Pennsylvania to include children with cleft palates among the orthopedic group. It was his contention that the Crippled Children's Programs deliberately omitted care to children whose problems were located anatomically in the head. We believe that for a number of years he was not aware of the fact that, outside of Pennsylvania, the child with cleft lip and palate deformity was getting the best type of care then available through the Crippled Children's Programs. In 1938 at Lancaster, Dr. Cooper established the first recognized Cleft Palate Clinic in this country, and through his activities there he convinced his legislative assembly to pass an act with appropriations making it possible to extend the Cleft Palate Program widely throughout Pennsylvania.[2]

Pennsylvania was the area in which much happened that influenced the pattern of action in our present field of interest. There in the early 1930's we first became aware of the activities of a man trained in speech and psychology, Dr. Herbert Koepp-Baker. After work on the speech problems of adults with cleft palate at Vienna, he became director of the Speech Clinic at Pennsylvania State College. He soon set up a relationship with the cleft palate prosthesis activity going on under the direction of Dr. Cloyd S. Harkins working at nearby Osceola Mills. Working together, these two men began an activity which had a great influence on the present situation. A direct result of their collaboration together was the foundation of the American Academy of Cleft Palate Prosthesis at Harrisburg, Pa., on April 4, 1943. That year, Dr. Linwood Grace, as chief of the Dental Division of the Department of Health in Pennsylvania sponsored a course for construction of speech appliances for children with cleft palates. Six years later, through recognition that a broader point of view was necessary, the academy was reorganized, the basis of membership was broadened, and it was renamed The American Association of Cleft Palate Rehabilitation. This change represented a shift in the emphasis from prosthesis in cleft palate work to an interest in the person with the anomaly, and is related to one of our background factors—the whole-child concept.

Let us look at the problems that beset the directors of State Programs for Crippled Children for several decades. In most areas the surgeon completely dominated the planning for the care of the child with the cleft palate deformity. He decided when and how to operate, and made decisions concerning the timing of and advisability for care which was to be given by others. Often this was done using the poorest forms of communication. The parents were frequently told what the next steps were and were then left to their own devices

to contact the next consultant. Fortunate indeed were those children and their parents who received care through medical administrative agencies because this focused on someone the need to do a bit of correlating. Our own medical school training emphasized the role of surgery as being the most important facet of cleft palate care. The problems of speech and the variabilities of dental care came into our thinking largely through the study of problems besetting the crippled children who came our way.

About the same time that Dr. Cooper organized his clinic, an event occurred in Maine, which had little significance at the time other than representing a way to get things done that needed doing. We had been providing care to children with clefts through plastic surgeons and others and, if by chance, recommendations for orthodontia were made in older children, services were sought for them. Speech problems were present too, but resources were almost nonexistent. Chance played into our hands favorably when Dr. James Mabie, a maxillofacial surgeon, and Dr. Albert MacDougal, an orthodontist, jointly established an office at Bangor. We seized upon this opportunity to bring about correlation of activities for a few children by having these two men see the children together to work out a good plan for care. Soon, thereafter, it was suggested that some of the children might have a short period of resident speech therapy service at the University of Maine which was nearby. Thus, a few children began to get services, in a more or less integrated manner, for the three principal aspects of care. The whole child, we hope, was provided for through the Crippled Children's Clinic activities and the child care aspects of the local public health nurse's visits. At that time we were essentially isolated workers in an area which had the average medical and related services to be found in a highly rural state.

The next step in our personal view of this matter came in April, 1946, when the Division of Services for Crippled Children of the University of Illinois called together many authorities in the cleft palate field who rendered service to our crippled children in the state and in St. Louis, Mo. Our supervisory staff representing the fields of pediatrics, speech and hearing, nursing, and medical social service had noted the many inadequacies in the method of getting care which was in vogue at the time. They felt that a conference with the specialists whom our program used would furnish a sound way to point out means of improving the program. Almost all the surgeons whom we utilized attended along with people in the fields of pediatrics, dentistry, and speech. Everyone was given an opportunity to present his views and practices. Controversy raged but as the proceedings of the meeting show, this session produced recommendations that studies should be made using our wealth of clinical material to learn what constitutes a good program. We had also been impressed with the fact that in any program of medical care which is of long duration and involves many professional disciplines, it would be advantageous to both the patient and the professional workers for various people to see the child and his problem from the beginning when certain people could render specific professional services rather than at times arbitrarily chosen. In 1946 the Illinois program began to have patients seen by pediatricians, orthodontists, surgeons, speech pathologists, and public health nurses from the earliest possible time in the life of the baby. The nurse was usually first in the picture because she saw the baby in the home. Altogether too often she, in doing her well-baby inspection, may have been the first to discover a cleft of the palate.

We felt that the orthodontist should have an opportunity to study the child

before any surgery was done, and that a speech worker should also see the patient early to get impressions concerning the deformity, both as to anatomy and physiology. No one told the surgeon what to do other than that we wanted him to see the baby as early as possible to enable him to discuss the problem of care with the parents. We usually placed in the hands of our speech people the responsibility to interpret, in very general terms, a picture of what lay ahead. We would bring into the discussion the roles that various professional people might play. We still employ this method of starting early to get into the natural history of the cleft lip and palate problem, and we believe that it represents an excellent way of bringing people together. It also gives parents a feeling of comfort that professional people are working to provide the best care for their child.

Of course, we now have cleft palate teams in medical or dental centers, which improve our total service. The first of those available to us was the one in the Northwestern University School of Dentistry. Four others, including the Training Program at the University of Illinois, are now available. Even with these seemingly large resources, we cannot send all of our patients through a diagnostic and evaluating team but must, through our public health administrative talents and personnel, attempt to correlate the activities for our patients. Approximately half of our patients are handled each way.

Let us turn back to the Children's Bureau and its interests. These have usually mirrored the local interests of the states. Traditionally, the Children's Bureau has been interested in quality and standards of care. Included in this is an interest in training people, if enough professionally educated and experienced people are not available to render the care brought to the attention of the state programs. Dr. A. L. Van Horn who headed the crippled children's activity in the Children's Bureau in the midforties, was interested in the thinking of the American Academy of Cleft Palate Prosthesis and had Dr. John T. Fulton, dental services advisor, attend the meetings. The bureau wished to develop a training center devoted to the cleft palate problem and, consequently, in 1947 at an advisory conference on orthodontics this matter was placed on the agenda, largely through the efforts of one member of the committee, Dr. Cooper. The need for training in the team approach was voiced. A document entitled "Suggested Principles for a Training Program in Care of Children with Cleft Palates" was developed through the Program Planning Section of the bureau. This section was headed at that time by Dr. Samuel Wishik.[3]

This document plus the availability of special training funds which had been made available through Reserve Fund B in the grants-in-aid program made it possible for the bureau to search for a state that would be both able and willing to handle the problem. Eventually in May, 1948, the Children's Bureau representative and the director of the Division of Services for Crippled Children in Illinois came to an agreement that the idea seemed worth pursuing. At the University of Illinois, the College of Medicine, the College of Dentistry, and the Division of Services for Crippled Children are all under the same administrative head, the vice-president in charge of the Chicago Professional Colleges. He was Dr. Andrew C. Ivy, and the opportunity for teaching, research, and service through the training program seemed attractive. In 1949 the program actually got under way under the direction of Dr. Herbert Koepp-Baker.

By this time, teams for cleft palate care were not new. There were many scattered throughout the country, often set up through the stimulus furnished by

a Crippled Children's Division. The unique attribute of the University of Illinois program was that it was primarily a training program, which was designed to provide additional training to specialists, to promote fuller knowledge about all aspects of the problems of the person with a cleft palate, and by utilizing the service cases that received care to develop a research program which would point the way toward the problems and methods of the future.[4]

This Cleft Palate Training Program taught the University of Illinois a great deal. It pointed out the necessity for cutting across department and even college lines if the answers to the complex problems brought to professional and lay people by the cleft palate deformity were to be understood and handled well. It taught people who had not been accustomed to work together how to do so. It taught individuals to respect the knowledge and competence of others. The sharp lines of demarcation between specialties that had been set up during the past several decades were found to be artificial and to hamper community thinking. People had almost been trained to not work together. Dr. Baker very aptly defined what a team is not when he said, "A team is not merely an aggregation of specialists who are in the same room at the same time. A team must have the 'quality of organism.'"[5] A unique opportunity for group process is presented. Individuals contribute, learn, add to their knowledge, and discard old ideas.

It has been found that a chief deterrent to harmonious teamwork comes out of the professional jargon which different specialties have developed. A common and easily understood language must be developed by the team members if exchanges of ideas are to take place.[5] In the final development of the team, the various members learn to think like the other members and acquire bodies of knowledge outside of the field of their basic training. Pediatricians learn to think like dentists, and surgeons know what the speech people are talking about. While there has to be leadership of the team, there cannot be a boss in the commonly accepted terminology, because if the team is to live and prosper each member's voice and opinion is of equal importance to that of the others. It is the group as a whole that makes the judgment as to what, when and where things should be done. Dr. Baker points out that the role of the leader or director of the team can most aptly be called the "spark plug"[6] without whose effects the cylinders representing the team members cannot fire and get the mechanism going.

At the University of Illinois the program has been in operation nearly a decade, and in its research files there are available growth and development records showing the course of events that occurred. The background for this work can be found in the pioneering studies of Broadbent, Brodie, and numerous others.[7,8] Some children have medical and dental evaluations almost from the day of birth. These include, in addition to the usual history and physical examinations, regulation photographic x-ray cephalometric evaluations, and plaster models of the face and mouth. Children are seen periodically until their discharge from the clinic, perhaps twenty years after they were first seen. Opportunities for varied aspects of research are available to all kinds of specialists, many of whom have already made notable contributions increasing and improving knowledge about cleft palates.

Throughout, it is the child, not the deformity, that is the main concern of the team. They bend their efforts to make services available so that the child who comes to them with a deformity may go into adult life as an improved individual; one who can hold his own with any normal person. To do this he

must look well, talk well, and react well both emotionally and socially; he must be able to contribute to his community.

Currently, the Training Program is under the leadership of Dr. Edward F. Lis, a member of the Department of Pediatrics. Further, it is but a unit of a larger activity called the Center for Handicapped Children. Here studies can be made of children with multiple handicaps particularly, and the case material serves as a reservoir for teaching students in medicine, dentistry, nursing, occupational therapy, and social work.

There are several patterns for teaching groups other than those in the undergraduate fields mentioned above. Residents and interns in any of the professional disciplines may improve their knowledge in the field through the training program. Short courses may be given once or twice a year to approximately 20-30 professional people who wish to improve their knowledge in the cleft palate field. This opportunity is sought especially by individuals and members of agencies who wish to explore the possibilities of teamwork in their own areas. Long instructional situations, lasting a year or more, have been available for those who wish intensive experience to improve their knowledge and technics. The latter opportunities have been largely in the specialized dental fields. In addition, a small team, usually of four members of the group, have gone to various states to give what amounts to a short two to three day course in modern knowledge about and services for children with cleft palates.

By our own practice, we attest to the fact that teams cannot meet all the needs of people with cleft palates. In certain areas the climate is just not suitable for establishing teamwork situations. We do feel, however, that public health does have a role to play. By administrative activities we make possible the integration of clinical and related activities carried out in the interest of the child with the cleft palate anomaly. Its end should be to insure that adequate, high quality services are available at the right time, so that all the needs for habilitation of the child are met.

Much has happened in the past 30 years to improve the lot of a certain group of handicapped children—those with cleft lips or palates. Much that has happened has been by design, but chance, itself, probably played a great role in influencing the course of events. We are reminded of the motto from Pasteur on the ceiling of the foyer of Vanderbilt Hall, the dormitory of the Harvard Medical School. It relates to the fact that chance favors only those who are prepared. We hope that what has been learned through teamwork in the cleft palate field can also be extended to the care of other complex problems.

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Dr. Kobes was director, Division of Services for Crippled Children, University of Illinois at the time this paper was presented. He died on January 10, 1959. Dr. Pruzansky is associate director, University of Illinois Cleft Palate Training Program, Chicago, Ill.

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A field study of periodontal disease in Birmingham, Alabama, showed that certain socioeconomic factors, especially education, influence the occurrence of this condition in racial groups. The need for studying groups of equivalent socioeconomic status is stressed and several related problems are explored.

PERIODONTAL DISEASE AND SOCIOECONOMIC STATUS IN BIRMINGHAM, ALA.

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A SERIES of previous field studies indicated that group levels of periodontal disease are associated in some manner with the social or economic status of the groups under observation.[1-3] The present study was designed to examine some of these associations in greater detail and to inquire whether the commonly-observed differences in scores of white and Negro groups represent a true racial difference or can be explained on the basis of socioeconomic status alone.

To this end, 2,325 persons ranging in age from 15 through 74 years were examined in Birmingham, Ala., during the summer of 1957; of these, 1,551 were white and 774 were Negro. One hundred and forty-two white persons and 33 Negroes were edentulous, leaving 1,409 and 741, respectively, who could be scored for periodontal disease. Of these, 1,322 white and 532 Negro persons were regularly employed at the time of examination.

This sample was neither random nor in any way representative of Birmingham as a community. The effort was rather to include as many persons of diverse background and occupation as was practicable. Thirty distinct groups were examined, ranging from employees of bakeries, steel mills, publishing houses, food processing plants, manufacturing concerns, and retail establishments to applicants at health department clinics. None of the findings to be reported is applicable to Birmingham as a whole community.

Method

All of the examinations were carried out with the subject seated in a dental chair under a standard (Castle) dental examination lamp. In some situations equipment in one of the dental trailers operated by the Jefferson County Health Department was used; in others equivalent portable equipment was set up within the establishment itself. Mirror, explorer, and standard scalers were employed. Each of the examiners was calibrated to the senior author.*

Each tooth present was scored for dental caries[4] and for periodontal disease[5] by criteria previously described. In a subsample, the presence or absence of materia alba on the gingival third of two or more incisor teeth was recorded. These findings were dictated by the examiner in code; sex and race were noted. Other data entered for each

* In addition to the authors John C. Greene and C. J. Donnelly participated as examiners.

patient but unknown to the examiner included name, street address, age, date of birth, occupation, and education.

In periodontal scoring each tooth was rated on a scale based upon the classical clinical signs of marginal periodontitis—inflammation, pocket formation, and loss of function. An individual's score is the average for the teeth present in his mouth. Most persons with a clinical diagnosis of gingivitis score from 0.1 to 1.0, those with frankly-established destructive disease from 1.5 to 5.0, and those with disease in terminal stages from about 4.0 to 8.0, the maximum score.[5]

Findings

Scores for both dental caries and periodontal disease were moderately lower, and tooth mortality rates were sharply lower, than those recorded for a near-random group examined earlier in Baltimore.[6]

Educational status—About two-thirds of the white persons examined had graduated from high school but more than half of the Negroes had failed to complete the twelfth year, with differences most marked in persons aged 40 years or older. Periodontal scores for both races, by educational attainment, are shown in Table 1. Within a given age group, in either race, scores tend to become progressively lower as groups of higher educational attainment are studied.

Professional dental care—Periodontal scores as related to needs for fillings are shown in Table 2. In about 60 per cent of white persons and about half that proportion of Negroes all carious teeth had been filled or extracted, i.e., no neglect of care was evident. About one-

Table 1—Periodontal Scores by Years of School Completed, Birmingham, 1957

Age Group	Persons with 8 Years of School or Less		Persons with 9 to 11 Years of School		Persons with 12 Years of School		Persons with 13 Years of School or More		Approximate P*
	Number	Score	Number	Score	Number	Score	Number	Score	
				— White —					
15–19	2	0.00	43	0.38	53	0.43	14	0.17	0.20
20–29	37	1.30	84	0.70	183	0.50	175	0.27	<0.001
30–39	50	1.33	90	1.16	132	0.49	132	0.32	<0.001
40–49	46	1.28	57	1.09	106	0.59	74	0.24	<0.001
50 and over	30	2.06	25	1.42	24	0.82	42	0.39	<0.001
All ages	165	1.42	299	0.93	498	0.52	437	0.29	<0.001
				— Negro —					
15–19	2	0.65	39	0.51	38	0.48	29	0.43	>0.20
20–29	34	1.19	66	0.76	62	0.59	91	0.28	<0.001
30–39	59	1.85	40	0.97	29	1.09	29	0.50	<0.001
40–49	61	2.44	35	1.59	10	1.09	14	0.86	<0.01
50 and over	76	2.72	14	3.41	6	2.97	3	1.23	>0.20
All ages	232	2.18	194	1.09	145	0.80	166	0.41	<0.001

* Based on F ratios.

Table 2—Periodontal Scores by Relative Need for Restorative Dental Care (Excluding Persons Wholly Caries-Free): Birmingham, 1957

Age Group	Persons with One or More Teeth with Pulp Exposures		Persons with One or More Unfilled Carious Teeth but Free of Lesions Exposing the Pulp		Persons with All Carious Teeth Filled or Extracted		Approximate P*
	Number	Mean Score	Number	Mean Score	Number	Mean Score	
			— White —				
15–19	20	0.34	53	0.47	36	0.25	0.08
20–29	37	1.17	190	0.68	248	0.27	<0.001
30–39	11	2.25	121	1.20	259	0.39	<0.001
40–49	9	2.86	65	0.99	201	0.51	<0.001
50 and over	9	3.03	20	1.49	93	0.82	<0.001
All ages	86	1.48	449	0.88	837	0.43	<0.001
			— Negro —				
15–19	31	0.45	58	0.51	9	0.46	>0.20
20–29	66	0.72	121	0.67	49	0.31	0.01
30–39	27	1.56	75	1.26	42	1.09	>0.20
40–49	35	2.55	45	1.71	37	1.62	0.08
50 and over	26	3.58	45	2.85	26	1.88	0.02
All ages	185	1.55	344	1.19	163	1.07	0.01

* Based on F ratios.

third of white adults and nearly half of the Negroes had one or more carious teeth which, in the judgment of the examiner, could be filled. About one white person in 17 and about one Negro in four had one or more carious teeth in which the crown was virtually destroyed, requiring extraction rather than filling. These three groups, in general, represent progressive degrees of neglect of professional care.* Periodontal condition of the groups is directly related to the degree of neglect in both races at all ages over 20. Disease was the more severe as the degree of neglect increased.

This procedure separated the white persons examined into distinct groups; within these groups there was comparatively little variation in scores. In Negroes, on the other hand, there was much overlap in scoring between groups, and the data show no more than a general tendency for persons in need of fillings to exhibit the less favorable periodontal condition. The low probability values for Negroes shown in Table 2 are due more to this relatively high variation within groups than to the smaller numbers examined.

Both of these findings confirm observations previously reported. Hitherto unexplored in the field was the relation

* Persons wholly caries-free, for whom these needs criteria are meaningless, have been excluded from this comparison. Eliminated were 37 caries-free white persons with a mean age of 34.4 years and a mean periodontal score of 1.27, and 50 caries-free Negroes with a mean age of 28.9 years and a mean periodontal score of 0.72. These represented 2.6 per cent and 6.7 per cent, respectively, of the whole groups examined.

between periodontal disease and occupation.

Occupation—The occupation of each employed person was classified according to criteria used by the Bureau of the Census in 1950.[7] Because of the small numbers of persons and unequal representation by sex in some of these census categories, professional and semiprofessional workers were combined with proprietors, managers, and officials (census categories V and 1), and all semiskilled and service workers (census categories 4, 5, 6, and 7) were placed in a single group. These findings with scores adjusted for sex are shown in Table 3.

In the white workers both years of education and periodontal scores are directly related to occupation. The higher educational attainment and the better periodontal condition were seen in workers in the more favored occupations. Data for the Negro workers show the same general tendency, in that the 47 employed in the more favored occupations (census categories V through 2) are better educated and in better periodontal health than the rest of the Negro persons examined. However, there is little difference, either in education or periodontal scores, between Negro craftsmen and foremen, operatives and service workers, and common laborers (cate-

Table 3—Sex-Adjusted Periodontal Scores of Employed Persons by Occupation, Birmingham, 1957

Census Category	Occupation	Number Examined	Number Edentulous	Sex-Adjusted Mean		
				Age	Years of School	Periodontal Score
		— White —				
V, 1	Professional and semiprofessional; proprietors, managers, and officials	220	8	31.9	14.4	0.37
2	Clerical and sales	575	17	35.3	13.1	0.39
3	Craftsmen and foremen	198	45	40.6	10.2	0.68
4, 5, 6, 7	Operatives and service workers	429	67	34.4	9.8	1.02
9	Laborers	33	5	34.9	9.7	1.45*
	All occupations	1,455	142	35.3	11.7	0.67
		— Negro —				
V, 1	Professional and semiprofessional; proprietors, managers, and officials	28	2	37.4	15.8	0.57
2	Clerical and sales	19	–	31.7	10.6	1.04
3	Craftsmen and foremen	32	3	41.2	8.1	1.57
4, 5, 6, 7	Operatives and service workers	393	25	38.8	8.5	1.62
9	Laborers	93	3	36.1	8.5	1.43*
	All occupations	565	33	38.2	8.9	1.50

* No females in this category.

gories 3 through 9). For either race the data suggest that education is more closely associated with periodontal condition than is occupation.

Oral debris — Approximately half (1,259 persons) of the group was scored for presence or absence of oral debris according to criteria used by McCombie.[8] The presence of materia alba (not salivary calculus) on the gingival third of two or more incisor teeth was demonstrated by scraping with the explorer tine. Oral debris was thus demonstrable in 163 of 700 white persons (23 per cent) and in 267 of 559 Negroes (48 per cent). Periodontal scores for these persons are shown in Table 4.

In each of the 20 age groups listed in Table 4 persons with obvious oral debris show substantially higher scores than persons with relatively clean mouths; the differences are of a magnitude to indicate clinical as well as statistical importance. On the other hand, of the 20 age-sex comparisons between the races, whites show higher scores than Negroes in ten categories and Negroes show higher scores than whites in ten categories.

It is obvious that between persons with equivalent oral cleanliness no racial differences are apparent.

Oral debris, care, and education— Each of the items so far examined is related to each of the other three. Persons with the higher educational attainment tend to follow occupations with better pay and social prestige, to show cleaner mouths, and to receive more adequate professional dental care. Within this group, a person's occupational status could be inferred with great accuracy on the basis of his education, and debris and dental care status. At this point, the question occurs as to whether the difference between groups of unequal socioeconomic status might be due wholly to differences in personal cleanliness and professional care.

In order to examine this question, employed persons scored for oral debris were divided into two groups by educational status—those with 11 years of school or less and those with 12 years of school or more. These educational groups were then subdivided into groups of persons with and without obvious oral debris and each of these subgroups again divided into sub-subgroups of persons with or without an open carious lesion requiring filling. Persons wholly caries-free were eliminated. As a result eight comparison groups were set up for each of the races. Since numbers were small, mean ages were determined and a single periodontal score computed for each of these subgroups. These crude group scores are shown in Table 5.

While these crude data would indicate a clear superiority in persons with relatively clean over persons with relatively unclean mouths and in persons with 12 or more years of schooling over those with 11 years of schooling or less, such comparison seems unwarranted in view of the differing ages; in each subgroup persons with the lesser education are substantially older than persons with the greater education. In the one category the mean age is 31.0 years and in the other, the mean age is 38.8 years. When scores for this whole array of persons (white and Negro combined) are computed, means rise in virtually straight-line fashion from 0.40 at ages 20-29 to 2.07 at ages over 50. On this regression line the mean score at age 31.0 years is 0.71, and the mean score at age 38.8 years is 1.16. The difference in ages, then, could account for scoring differences on the order of 0.45, and some correction is necessary before comparisons may be made on a valid basis.

Table 6 shows the results of one of the possible adjustment procedures. This array lists the differences between observed scores for the several subgroups, and the whole-group score computed (from the regression) at that mean age. In the first category of Table 5, for

example (white persons with 11 years of school or less, without obvious materia alba and with no unfilled carious lesions), the observed score of 0.96 was 24 per cent less than the score of 1.27 computed for all persons in this whole group at the age of 40.8 years. The same procedure was followed for each of the subgroups in turn.

The effect of this correction is to narrow the crude differences between persons with more or with less educa-

Table 4—Periodontal Scores, Birmingham, 1957: Persons With and Without Obvious Oral Debris (Materia Alba) on Two or More Incisor Teeth

Age Group	Persons With Oral Debris			Persons Without Oral Debris			Approximate P*
	Number	Mean Score		Number	Mean Score		
			— White Males —				
15–19	4	0.80±	0.30	8	0.15±	0.06	0.03
20–29	36	1.56±	0.20	75	0.54±	0.09	<0.001
30–39	34	1.77±	0.28	84	0.60±	0.09	<0.001
40–49	23	1.75±	0.24	43	1.19±	0.24	0.15
50 and over	11	2.34±	0.71	22	0.87±	0.26	0.03
All ages	108	1.72±	0.14	232	0.70±	0.07	<0.001
			— White Females —				
15–19	11	0.94+	0.14	34	0.23+	0.05	<0.001
20–29	21	1.07±	0.35	136	0.22±	0.03	<0.001
30–39	12	2.35±	0.33	61	0.76±	0.15	<0.001
40–49	8	1.85±	0.56	56	0.51±	0.11	0.001
50 and over	3	5.00±	1.42	18	0.96±	0.29	<0.01
All ages	55	1.65±	0.21	305	0.42±	0.04	<0.001
			— Negro Males —				
15–19	18	0.72±	0.11	13	0.23±	0.07	<0.001
20–29	34	1.05±	0.14	47	0.36±	0.08	<0.001
30–39	36	1.93±	0.25	39	0.58±	0.13	<0.001
40–49	20	3.15±	0.38	23	1.23±	0.36	<0.01
50 and over	35	2.87±	0.31	13	1.97±	0.49	0.15
All ages	143	1.97±	0.14	135	0.72±	0.10	<0.001
			— Negro Females —				
15–19	26	0.67±	0.10	36	0.32±	0.07	0.01
20–29	43	0.74±	0.08	60	0.24±	0.05	<0.001
30–39	23	2.05±	0.32	31	0.68±	0.12	<0.001
40–49	19	2.97±	0.48	17	0.68±	0.16	0.001
50 and over	13	3.91±	0.71	13	2.02±	0.59	0.08
All ages	124	1.64±	0.16	157	0.54±	0.07	<0.001

* Based on t test.

Table 5—Crude Group Periodontal Scores: All Employed Persons Scored For Oral Debris, Birmingham, 1957, Except Those Caries-Free

Racial Group	Persons with 11 Years of School or Less			Persons with 12 Years of School or More		
	Number Examined	Mean Age	Mean Score	Number Examined	Mean Age	Mean Score
	Without Obvious Oral Debris and with No Unfilled Carious Lesions					
White	66	40.8	0.96	229	32.0	0.27
Negro	31	41.6	1.01	22	36.0	0.57
	Without Obvious Oral Debris but with One or More Unfilled Carious Lesions					
White	92	33.6	1.13	99	27.7	0.42
Negro	59	39.0	1.28	49	31.3	0.51
	With Obvious Oral Debris but with No Unfilled Carious Lesions					
White	28	40.0	2.02	32	32.6	1.27
Negro	25	48.3	3.02	8	37.8	1.23
	With Obvious Oral Debris and with One or More Unfilled Carious Lesions					
White	44	33.1	2.00	37	30.1	1.42
Negro	115	40.9	2.42	36	28.8	1.36

tion. Nevertheless, and despite the small numbers allotted to some of the subgroups, it remains apparent that persons with relatively clean mouths suffer less from periodontal disease than persons with obvious oral debris, and that within either category persons in obvious need for restorative dental care are in worse periodontal condition than persons with all cavities filled. In four of the eight comparisons Negroes score higher than whites, with whites higher than Negroes in the remaining four.

In addition, when the comparisons are carried out with persons of similar debris and care status, those with the better education continue to show the better periodontal experience. The difference is not marked, however, in persons with obvious oral debris. Scores for white persons with debris but no unfilled carious lesions are nearly identical after adjustment for age, and scores for Negroes with debris and unfilled lesions are relatively higher in persons with 12 or more than in persons with 11 or fewer years of schooling.

Discussion

Essentially the same relation between periodontal scores and educational attainment has been seen by us in previous studies,[2,3] and about the same patterns have been observed by Wisan and Elkin in the first phase of a study of Philadelphia adults.[9] A similar relation between gingivitis and neglect of professional dental care has been described in children.[10]

Moen has presented data on dental patients indicating that, while the need for periodontal treatment varies little from occupation to occupation in males, total needs for extraction for causes other than dental caries rise from an average of 0.78 teeth per man among professional and semiprofessional workers to 2.39 teeth per man among laborers.[11] In his whole group of males aged 15 years and over, periodontal disease accounted for about 70 per cent of extraction needs for causes other than caries.[12] His data seem consistent throughout with the field findings presented here.

In a study of National Servicemen in Singapore averaging about 21.5 years of age, McCombie and Chua found a similar relation between oral debris and periodontal scores in 196 Chinese and in 180 Malaysians, though none could be demonstrated in 73 Indians and Pakistanis.[13] Findings in the present report seem to indicate that, in these people, the presence of oral debris was the most deleterious factor considered; this factor alone is sufficient to explain the crude differences between Negro and white persons. On the other hand, given clean mouths and equivalent needs for restorative dental care, persons with better education continue to show the better condition of periodontal tissues. This would seem to indicate that something in the way of life of this group, beyond relative mouth cleanliness and professional care, tends to hold periodontal disease in check.

An obvious corollary to the findings as a whole is the necessity, when com-

Table 6—Group Periodontal Status Adjusted for Age: All Employed Persons Scored for Oral Debris, Birmingham, 1957, Except Those Caries-Free

Racial Group	Compared with Whole-Group Score at Equivalent Age	
	Persons with 11 Years of School or Less	Persons with 12 Years of School or More
	Without Oral Debris and with No Unfilled Carious Lesions	
White	− 24%	− 64%
Negro	− 23%	− 42%
	Without Oral Debris but with Unfilled Carious Lesions	
White	+ 36%	− 24%
Negro	+ 10%	− 29%
	With Oral Debris but with No Unfilled Carious Lesions	
White	+ 64%	+ 63%
Negro	+ 77%	+ 14%
	With Oral Debris and with Unfilled Carious Lesions	
White	+147%	+115%
Negro	+ 89%	+127%

parisons between groups or communities are required, of studying samples equivalent in socioeconomic status. A study in Birmingham of a sample made up mainly of unskilled workers would have reported levels of periodontal disease more than twice as high as a similar study in Birmingham of a sample made up mainly of clerical and sales workers.

Summary and Conclusions

1. There were 2,150 dentulous white and Negro persons aged 15 through 74 years who were given periodontal examinations in Birmingham, Ala. Of these 1,322 white and 532 Negro persons were regularly employed at the time of examination. Presence or absence of obvious oral debris was recorded for 700 white and 559 Negro subjects.

2. When these factors were considered singly:

a. Negroes showed higher periodontal scores than whites.

b. Persons with the lesser education showed higher periodontal scores than persons with the greater education.

c. Persons with unmet needs for fillings showed higher periodontal scores than persons whose care needs had been met.

d. Persons in the less-favored occupational groups showed higher periodontal scores than persons in occupations higher in prestige and income.

e. Persons with obvious oral debris showed periodontal scores much higher than persons with mouths which were relatively clean.

3. When these factors were considered in combination:

a. Oral debris seemed to be the most deleterious factor of the several studied.

b. No differences between Negro and white groups of equivalent oral debris status could be demonstrated.

c. Given relatively clean mouths and equivalent needs for dental care, persons with lesser education continued to show higher periodontal scores than persons with greater education.

4. Comparisons between populations should be based upon groups equivalent in socioeconomic status.

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Artificial and natural purification processes are achieved by the metabolic activities of various microbes. The selection and adaptation of such organisms for treatment of waste is presented in the following paper.

SELECTION AND ADAPTATION OF MICROORGANISMS IN WASTE TREATMENT

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MICROBIAL METABOLISM is the basic mechanism in the natural purification of polluted waters. Purification of such waters by engineered biological treatment processes, i.e., activated sludge, trickling filters, oxidation ponds, etc.,[1] is, in this respect, not essentially different from natural stream self purification. Polluted waters in this presentation include sewage and industrial wastes and surface waters receiving these wastes.

It is recognized[2] that biological treatment is neither feasible nor advisable for some industrial wastes containing inhibitory or toxic substances. This category includes inorganic wastes such as those from metal-pickling and plating processes. Even these wastes are sometimes discharged into municipal sewers and into streams and affect the biological processes therein. Often industrial wastes contain mixtures of inorganic and organic compounds, either of which may exert biologically inhibitive effects. Many such wastes contain synthetic compounds not commonly found in nature, in animal or plant residues. The problems of tolerance levels and of microbial adaptation, synergisms, and antagonisms may become of paramount importance.

The various aerobic biological treatment processes[3] operate on the same fundamental principles and differ primarily by their methods of oxygen transfer. Microorganisms which inhabit these systems include bacteria, fungi, algae, protozoa, rotifers, and higher forms. In the anaerobic systems somewhat less diversity of forms is found; however, the processes embrace the combined activities of a large variety of species. All the treatment processes, either aerobic or anaerobic, as well as the natural self-purification of streams, lakes, and impoundments, comprise the aggregate activities of a community of microorganisms acting simultaneously or sequentially and utilizing definitive metabolic patterns and enzymatic pathways.

The transformations of carbon compounds by microorganisms have been excellently reviewed by Nickerson.[4] The common pathways of oxidations for carbohydrates, alcohols, acids, fats, waxes, and aromatic ring compounds are clearly shown. Not all of the enzyme systems described occur in every species of microorganism. It is for this reason that we find mixed populations effectively degrading wastes and a population

of which the composition changes in accord with the changing constituents of the polluted environment. Microbial cells may carry on many series of interlocking reactions where the product of one enzyme reaction may be the substrate for several other enzymes, and any modification of even one reaction will produce modifications in diverse reactions, many steps removed from the initial position.

The biological transformations of compounds containing nitrogen[5] and sulfur[6] have also been extensively studied. The degradation of nitrogen compounds will invariably be accomplished by hydrolysis of proteins and other complex nitrogen molecules, and will result in the eventual decomposition of the lower molecular weight residues. The degradation of these compounds will vary with aerobic or anaerobic conditions, and rigid control is necessary to avoid anaerobic conditions that result in the production of noxious materials. Diverse microorganisms participate in degradation of sulfur compounds, many of which command attention as they produce compounds having objectionable odors or causing corrosion of industrial equipment. Two principal sulfur products are formed, sulfate under aerobic conditions and sulfide under anaerobic conditions.

The ultimate goal of natural or of biologically-controlled purification is to transform any pollutional material into innoxious components. To achieve this end it is sometimes necessary to develop specialized populations or to provide unusual environments. Such specialized populations (seeds) have been described for the treatment of a variety of naturally occurring and synthetic materials. This development is frequently termed "acclimatization," but more properly should be considered selective growth and adaptation of organisms resident in the environment.

Among the large number of microbial species extant, some species will be relatively well adapted to any environment encountered in polluted water, stream sediments, or in artificial treatment processes. And since the species of microorganisms involved in such processes are ubiquitous,[7] we can expect a suitable organism to be present when a specific environment arises. Any sample of soil or polluted stream bottom contains countless kinds of microenvironments, some high in nutrient and some low, some aerobic and some anaerobic, and each has its characteristic biota. Furthermore, microbes can with some exceptions lie dormant for long periods when their environment is unfavorable. This characteristic of being universally present and yet yielding the environment to the "best fitted" species seems to explain a large portion of microbial adaptations, as well as to account for the well recognized usefulness of stream muds or sludges as starters in treatment plants.

Scientific and industrial activities are changing the environment by the addition of chemical compounds which have not been components of soil or aqueous environments in the past, and organisms are confronted with new chemical entities in concentrations and under conditions not previously known. For organisms to appear that can utilize these new chemicals, it is necessary that large numbers of the wild type be challenged and that selective processes prevail. With some of the newer organics, such selections have not as yet been completely successful; however, there appears to be no reason why suitable organisms should not be found if the search is sufficiently diligent.

All living organisms from microbe to man have become adapted to their habitat, i.e., to its energy supplies, temperature, and other aspects, and all react to multiple factors of this environment. Therefore, in considering microbial interactions in natural habitats or in conventional treatment processes—in soil,

trickling filter, or sludge digestion tank —we must realize that the microbes live there in populations of billions, and that they intermingle on a scale that is impossible for higher plants or animals. Changes in food supply, be it domestic sewage, resistant organic material, or some chemical compound developed in the future, will directly support only that portion or portions of the population that can utilize the food available. The medium and conditions of growth usually select specific individuals from the inoculum (seed) most fit to survive in the new environment. Usually these grow better after a period of training through repeated generations in the new menstrum, which means the selection of species of a "superior" growth type. Because this superior growth is observed only if the organisms that possess it pass it on to their descendants, often the resultant population will be the progeny of one or a few individuals of the original inoculum. In this way selective populations are developed, as has been so adequately demonstrated by special isolation technics[8-10] and the adaption of treatment processes to chemical compounds.[11-13]

Species selected in this fashion must make further adjustments in order to survive and to reproduce. These adjustments are frequently termed adaptation and are related to microbial ability to acquire or to activate enzymes for the use of compounds not initially available to the organism as food. Such adaptations are not usually retained by the organism when the compound is removed from its environment. Transfer of these adaptive qualities in active enzyme systems from one generation to the next apparently does not involve changes in the genetic pattern, but rather appears to depend on the necessity for the organism to use the particular characteristic in maintaining life. Some of these modifications are direct, as when a culture of bacteria is exposed to penicillin. Each cell of the population starts to produce the enzyme penicillinase which destroys the penicillin. There is no selection; each cell has the genetic ability to produce the enzyme but does so only when the material is present. The elaboration of an enzyme when it is useful and the ability to grow without it when it is of no value appears to be the basis for much of the on-the-spot adaptation of microbes. One well known example is the enzyme production in some coliform bacteria that metabolize lactose. This enzyme may appear only after the culture has been incubated several days. The environment changes the organism but only within the limits of its genetic make-up. These modifications are termed induced[14] or adaptive enzyme formation.

There is another mechanism whereby superior strains may arise as a result of a sudden change in the genetic make-up, which is passed on at cell division. These changes in microorganisms are called mutations and supposedly occur in any of the numerous "genes" present in the cell, at an average rate of about once in every ten million divisions[15,16] per gene. This mutation rate of each gene has been determined naturally by evolutionary challenge, since if mutation occurred too seldom, the organism could not successfully compete in a changing environment, and if too often, too many individuals would be lost in wasteful modifications. Even with one new mutant occurring per ten million cells at every generation, it would seem that after a few generations nearly all the organisms would be mutant in one or more characteristics. However, in actual experience, cultures transferred under constant conditions remain relatively stable over long periods, partly because many of the mutants are slower growers or otherwise not as well fitted to the environment as the parent organism. When new mutants appear which are superior in growth characteristics, they overgrow and eliminate the parental

type together with existing intermediate or stray mutants, until the new in turn are eliminated by the same process.

The mutation rate can be modified by environmental conditions, such as ultraviolet light, radiations, certain organic and inorganic materials, metabolic products, etc. Many of these induced mutants are less able to compete in the environment than the parent types and are lost, so that an investigator may or may not be successful in recovering a predetermined desirable mutant by such methods of treatment.

Another possible method by which bacterial species may arise that are highly efficient in metabolizing complex substrates is that of gene recombination as described by Tatum and Lederberg.[17] In recombination, the resultant progeny of two parent strains carry the ability to metabolize a complex menstrum for which each parent possesses only a fractional ability, i.e., the offspring exhibit the combined characteristics of both parents. If one parent is capable of metabolizing fraction A of a complex and the other parent has the ability to utilize fraction B, the resulting offspring may be able to utilize the whole AB complex. When one considers the infinite number of microbial species present in natural habitats, it does not seem unlikely that some will be closely related and can produce desirable progeny that can accomplish the purification of highly complex and resistant materials.

In transformation, a particular characteristic is transferred from a donor strain of cells to a recipient strain which had not previously exhibited it. This transfer can be accomplished artificially by bringing desoxyribonucleic (DNA) acid of the donor cell nuclear apparatus into contact with the recipient bacteria, which incorporate the donated DNA into their cell substance. Acquisition of the new DNA fraction imparts to the recipient cells the characteristic originally carried by the donor strain. In mixed cultures of related microorganisms, this transfer by DNA can occur naturally when some of the donor cells become aged and break up, thus liberating the cellular components into the growth menstrum.

In transduction, the transfer of a characteristic is again accomplished by transfer of donor cell DNA to recipient cells. However, the actual mechanism of transfer is through phage particles acting as vectors. For this mechanism to function, it is necessary that both donor and recipient strains be susceptible to the phage. Phages have differing ranges of infectivity, but most are able to infect only closely related microorganisms. Therefore, transduction is likely only between closely related strains.

It seems certain that the selection and adaptation of a competent microbiota in waste treatment processes is a highly complex chain of events. It is likely that the selection from natural reservoirs of those microbial species capable of metabolizing the waste components, together with activation of latent enzymes, accounts for a large part of the adjustment necessary to propagate a useful population. Natural or induced mutations may be instrumental in modifications enabling organisms to metabolize materials such as "synthetics" which are not normally present in natural environments.

In recent experience, it has been possible to develop satisfactory microbial populations to treat most domestic and industrial organic wastes. Whether populations will be developed that can effectively degrade resistant materials such as alkyl benzene sulfonate and lignin must remain speculative at this time. The processes involved in such a chain of events will likely include selection of the "most fit to survive" progenitors, activation of certain latent enzyme systems, and probably genetic changes. Chemical pretreatment or conditioning

of resistant materials for biological breakdown may be a possibility.

Summary

Artificial and natural purification processes are accomplished by the combined metabolic activities of a number of microbial species and variants. The active members of a particular system are dependent on the composition of the substratum, i.e., its organic and inorganic components, pH, temperature and have been selected and adapted from the infinite number of microorganisms and microenvironments extant in nature, resident in soil, bottom muds, composts, and other materials.

Selection is accomplished by fortuitous matching of potentially competent microorganisms of the habitat and appropriate available waste materials.

Further adaptations are accomplished by producing necessary new enzymes either through activation of latent characteristics or through genetic changes that arise spontaneously or by stimulation from environmental factors.

Mutations may produce variants either more or less suited to the environment. Only the "more fitted" progeny are likely to survive.

The parts played by recombination, transformation, and transduction in the selection of the microbial biota in waste treatment processes may be important but cannot at present be fully evaluated.

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Journal of Public Health

EDITORIALS

A Jubilee Year for the Journal

With the current volume the American Journal of Public Health will complete its fiftieth year. Volume one appeared in January, 1911, and as time goes that was not long ago. In fact the present editor of the Journal had then achieved the age of six months. But what changes have occurred since then. In practically all areas of human life revolutionary changes have taken place—in politics, in economics, in technology, in science. Among these, the changes and the developments in public health have been among the most striking. It was in this period that public health assumed professional status. The first specific public health degree was awarded by the University of Michigan in 1910. The first school was organized in 1912 by William T. Sedgwick at the Massachusetts Institute of Technology. Organized health service in industry developed chiefly after 1910. The Children's Bureau was established in 1912. It was during this period that the impact of the bacteriological discoveries and their application made themselves fully felt. Declining death rates especially among infants and young people prepared the way for health problems of the present.

One could cite many more aspects of change, many more illustrations of discovery and application—and all of these found their place in the Journal. Throughout the fifty years that we are now completing the Journal has recorded the changing aspect of public health, and in so doing has contributed to the advancement of knowledge and to its effective application. It has been the organ of the American Public Health Association, and has endeavored to be the major professional channel of communication for public health workers.

The tradition of the Journal has been a noble one and among those who have guided its destiny have been the leaders of public health. In this jubilee year of the Journal we dedicate ourselves to move forward in the spirit of this tradition and to keep the Journal in the forefront of public health advance. "Quod felix faustumque sit"—May the outcome be a happy one—for the second fifty years as they have been for the first fifty.

Is Milk a Public Health Concern?

"Agriculture officials accept the fact that formulation of dairy standards and dairy inspection activities are definitely related to public health."

This statement by the commissioner of agriculture of one of our important agricultural states, who is also chairman of the executive committee of the National Association of Departments of Agriculture, is from a recent issue of the Dairy Industry Newsletter. By itself, the statement would seem to support health departments that have been under pressure in jurisdictions where departments of agriculture wish to assume responsibility for the sanitary production of milk and milk products. This appearance, however, is altered by the further statement, "they feel that these activities are so closely bound up in the marketing processes that one agency should handle both health and sanitation and marketing activities, and that this agency should be the department of agriculture." Furthermore, a change of this kind is urged at the federal as well as the state level.

No public health worker should consider this viewpoint as a personal idiosyncrasy. At present, responsibility for the public health supervision of milk production at the state level rests with departments of agriculture in 22 states, and is shared with health departments in four others. Legislation to transfer responsibility to departments of agriculture is pending or was recently rejected in Florida, Iowa, Michigan, and Missouri. In several instances, this change would have been made at the local as well as at the state level.

Why should this situation alarm public health administrators? Why should a transfer of responsibility from one department of government to another be considered capable of producing far-reaching adverse effects on the public health? The major reason for the existence of departments of agriculture is to promote the economic well-being of the agriculturist. Administrative experience has shown that a major responsibility will overshadow and subordinate a minor one. Were departments of agriculture to be given responsibility for the public health supervision of dairy production, it is reasonable to assume that the economic focus would subordinate the health interest. Health departments, on the other hand, exist solely to protect and to foster the public health. That disease transmitted through dairy products has been largely eliminated is an achievement to which public health workers can point with pride. The consequent assurance of the safety of our milk supplies has played a large part in the increase of milk consumption in the United States. Over the past fifty years per capita consumption of milk increased by 20 per cent.

There are other weighty reasons why responsibility for the sanitary protection of milk and other dairy products should remain with health departments or should be transferred to them. They have developed field and laboratory facilities for the purpose, and they have trained personnel that are now on the job carrying out field supervision and the necessary work of laboratory control. In addition to the trained personnel and adequate equipment at the state level, local public health administration supervises dairy production in town and city creamery, ice cream plant and pasteurizing establishment—not to increase the profits of the producer but to protect the health of the consumer.

Furthermore, health departments have been alert to the need for uniformity in the sanitary production of milk and its products. Since 1927, the U. S. Public Health Service has sponsored the use of the Milk Ordinance and Code. This code now serves as the basis for the production of milk in 36 states and 1,900 jurisdictions, and has also served as the standard for certifying interstate shippers of milk. More than 700 milk plants drawing their supplies from 100,000 farms have been certified as meeting the code requirements. This makes it possible for health departments

to approve milk produced in other areas thus obviating the delay and expense which field inspection would entail.

State legislation transferring from health departments the responsibility for the sanitary production of milk and its products will undoubtedly be proposed. Yet, if "formulation of dairy standards and dairy inspection activities is definitely related to public health," then it is essential to see that this responsibility is placed in an agency whose prime interest is public health. Federal legislation now being considered in HR 3840, "National Milk Sanitation Act" is of interest. This bill would call upon the Surgeon General of the Public Health Service to establish a system for the approval of the sanitary quality of milk and milk products for interstate shipment. The act would also establish a voluntary certification program similar to the one now conducted by the Service, and would prohibit the barring, on sanitary or public health grounds, of milk from a certified source by a state other than that in which the milk was produced. This proposed legislation is based on recommendations by the Association of State and Territorial Health Officers. The American Public Health Association has not yet adopted a position regarding HR 3840. However, this bill and any other legislation affecting public health responsibilities in milk production deserve serious attention.

Public health staff at all levels will be well advised to keep alert for any effort to weaken health department responsibilities in the sanitary supervision of milk production. At the same time, all health departments must be alert to opportunities that will make it possible to provide greater protection against disease transmission through dairy products; to ways of rendering more efficient the administration of public health supervision; and to guard against the imposition of economic barriers under the guise of public health.

American-Soviet Exchanges in the Health Field

ON NOVEMBER 21, 1959, the United States and the Soviet Union approved an Exchange Agreement covering the calendar years 1960-1961. Section VI of the agreement is concerned with public health and medical science, and appears to provide a framework within which there can be an orderly exchange of medical scientists, knowledge and ideas as well as the development and conduct of joint research projects. It seems to open the way for a more intimate and intensive relationship in the health field.

In dealing with the Soviets in this area, we must not delude ourselves into believing that as physicians or scientists we are necessarily above or outside the scuffle of political forces. We are in various ways enmeshed in them. The goal of the Soviet Union is undoubtedly to obtain as much technical gain and as much cultural propaganda as possible. Nevertheless, in public health and medicine, we should make every effort to expedite the flow of technical knowledge, coupling this with an effort to expand the understanding by the Russians of our way of life and its significant values. The former can be expected to contribute to world scientific advance; the latter, to a deeper understanding as the base for greater tolerance.

One must emphasize, however, that this exchange has as its primary purpose the interchange of ideas, and need not result in any political involvement of scientists. The possibility of political benefits which may result should not lead anyone to overlook the fact that successful results must be based on interactions of intrinsic scientific merit. In this sense, the exchange might be considered a cooperative rather than a competitive effort.

Although the flow of the technical

information has, thus far, been very predominantly from West to East, there is evidence that the United States may be able to learn something of significance, for example, in the use of live vaccines, in ecology and epidemiology. More important than this, however, is that channels can perhaps be opened up progressively through this program, so that a freer flow of information may lead into areas of knowledge and research which are presently not accessible. The American contribution to the development of Soviet research potential in the health field through this program must be viewed as an important contribution to the enhancement of the total world effort to conquer disease.

It is clear that the sending to the Soviet Union of bench level scientists, particularly, must be on an experimental basis. Working and living conditions, as well as professional and social relations that are extended to the health scientist in the Soviet Union, may be such as to make the experiment impossible to continue. Much will also depend on the choice of the first scientists from the United States sent for longer stays. If they can understand and tolerate the experience and win a place for themselves, defining a new type of relationship, it can probably succeed. The first experiences might have a considerable influence with the Soviets in loosening the bounds placed on scientists from the United States.

Despite the tight negotiations that have led to the specific exchanges agreed upon, the door may be standing open. While the United States Public Health Service is responsible for our side of the exchanges, a paragraph of the over-all agreement provides that "the visits and exchanges enumerated . . . are not intended to be exclusive of others which may be arranged by the two countries or undertaken by their organizations or private citizens." It is the interpretation of the Soviets that, under this clause, they can make arrangements with anyone without regard to the Public Health Service. This appears to be a fair interpretation, and one might anticipate expanding opportunities for exchanges as a result. However, experience in the health field to date indicates that the situation may be difficult; up to this point the impediment to extra-agreement activities has been on the Soviet side. Efforts of nongovernmental organizations and groups to arrange exchanges with the Soviet Union have been for the most part unavailing. However, it would be premature to conclude that the Soviets are not interested in scientific exchanges beyond the scope of agreement, since they have exchanged a number of scientific visitors with the United States in addition to those specifically stipulated.

With respect to the Exchange Agreement, the U. S. Public Health Service is in a unique position. An exception to the established practice has been made by both sides in allowing a direct relationship between the Soviet Ministry of Health and the Public Health Service. The broad implications of the agreement are undoubtedly clear to the Service, and it will endeavor to accomplish the ends sketched by the two parties. Certainly, the scientific and political goals of the program merit a full effort to make it succeed. The Public Health Service has already taken the initiative under the agreement by proposing a clear and specific two-year program, and is now discussing specific arrangements.

1960 Is the Golden Anniversary Volume
of the American Journal of Public Health

LETTER TO THE EDITOR

To the Editor:

I read with a great deal of interest the provocative article written by Doctor Milton Terris in your September issue concerning "The Changing Face of Public Health." Having had my first public health tutelage under Doctor Charles D. Chapin while I was an undergraduate at Brown University in Providence, R. I., and having served in the military nearly 30 years in a fairly active public health environment, I would suggest that there are at least two areas which Doctor Terris did not mention.

First, I believe there is a great need for quality control in laboratory procedures as performed at various hospitals in any community and know that, in the service, it has long been a policy to send out test solutions, smears, etc., for diagnosis to various facility laboratories. This has been considered essential because of the great new reliance many of our younger doctors are placing on laboratory findings and it is rather remarkable how easy it is to pick up a weak laboratory from these test procedures. I understand that in New York State at one time this was attempted but due to the objection of certain groups, who apparently did not care to have an evaluation of their work performance, it was abandoned. Second, there appears to me also to be a great need for medical education. I do not refer to the education of people interested primarily in the practice of medicine, but rather to the education of the public to teach them what good medicine consists of, to recognize the charlatan, to know proper fees and charges, and to know what constitutes malpractice.

In these two fields alone, I believe the Public Health Department can do a great deal to benefit the practice of medicine as a whole. I would appreciate very much any comments that you have to make on this and I am free to say that Dr. Terris, to whom I wrote, has agreed with me.

Charles H. Morhouse, M.D.,
F.A.P.H.A.
Fifth Air Force, United States Air Force, APO 925, San Francisco, Calif.

November 3, 1959

Conference on Industrial Wastes

Gaseous and liquid industrial wastes will be the subject of a conference sponsored for the second year by the Mid-Atlantic States section of the Air Pollution Control Association and the New Jersey Sewage and Industrial Waste Association on March 29 and 30 in the Hotel Traymore, Atlantic City, N. J. Gaseous wastes will be considered on March 29 and liquid wastes on the 30th. Raymond M. Manganelli, Ph.D., Department of Sanitation, Rutgers University, New Brunswick, N. J., for further information.

GLOSSARY OF ADMINISTRATIVE TERMS IN PUBLIC HEALTH

SEVERAL YEARS ago a small subcommittee of the Committee on Administrative Practice began working on a glossary of administrative terms commonly used by public health personnel. The project was undertaken in response to numerous requests from the field for a set of definitions which would improve communication among health workers. The subcommittee prepared some definitions and circulated them for comment to experts in both general and public health administration throughout the country.

These files have been made available to the CAP's successor, the Committee on Public Health Administration, which arranged for the completion of the glossary after giving careful consideration to the comments received. The remarks received from the consultants were very difficult to classify. A number felt that there should be no attempt to improve on "Noah Webster" and hence argued against the development of any new definitions. Most, however, felt that this was a worth-while effort and a long overdue step toward correcting the present confusing state in the use of administrative terminology.

The Committee on Public Health Administration voted at its last meeting on October 19, 1959, to approve the present glossary for publication in the American Journal of Public Health. It has done so as a stimulus toward the development of further improvement in the definitions and to encourage widespread interest in the use of administrative terms which will gradually come to have more precise meanings when used in the public health literature. The committee earnestly solicits the reader's continued comment about the terms and his experience with their use. The final test of the glossary must rest in its general acceptance as a practical means of communication among the professional groups charged with the responsibility for using it.

1. **Need**—That state or condition in the community which shows a lack of essential public health protection and well-being.

2. **Purpose**—A mission of the health agency which lies behind the establishment of a specific program objective.

3. **Objective**—A defined end result of specific public health activity, to be achieved in a finite period of time. Objectives are stated as definite aims or goals of action, which should be quantitatively measurable and capable of being reflected in standards performance. Objectives can be long-range, intermediate, and short-range.

4. **Function**—An area of responsibility whose discharge is required in order to meet program objectives.

5. **Function, Operating**—That function which contributes directly toward the achievement of the objective.

6. **Function, Administrative**—That function which involves the planning, evaluation, advice, facilitation, and coordination of health effort. They modify and control the operating functions.

7. **Activity**—The performance of a function by an organizational unit toward the achievement of a stated objective.

8. **Procedure**—The prescribed sequence of defined activities required to meet a program objective within the framework of the organization and in line with definite policies.

9. **Operation**—A specific task or series of tasks which when completed advances work to the next operation.

10. **Technics**—The specific skills required for the performance of a specific operation or function.

11. **Administration**—The planning, facilitation, execution, evaluation and control of services.

12. **Baseline or Benchmark**—The recorded status of the situation before action is taken to effect change, to which subsequent action or accomplishment can be referred.

13. **Effectiveness**—The degree to which an action accomplishes the specific end result toward which that action is aimed.

14. **Efficiency**—The capacity of an individual, organization, facility, operation or activity to produce results in proportion to the effort expended.

15. **Evaluation**—The process of determining the value or amount of success in achieving a predetermined objective. It includes at least the following steps: Formulation of the objective, identification of the proper criteria to be used in measuring success, determination and explanation of the degree of success, recommendations for further program activity.

16. **Plan**—An orderly construction of the major objectives and the steps needed for their achievement. It includes the following three points: Formulation of objectives, assessment of resources available to realize these objectives, preparation of work program to achieve the objectives.

17. **Policy**—The controlling principles of an organization which determines the boundaries of action in the selection of objectives and in the promulgation of the work of the organization.

18. **Program**—All of the work to be done by an organization to meet a broad area of health need. The program is made up of a number of activities and may involve several related objectives.

19. **Program Planning**—The process of determining the organization's plan of action to be performed within a specified time interval. It includes the delineation of the program content, objectives, procedures, criteria for evaluation, timetable of activities and coordination with related activities.

20. **Standard of Performance**—The prescribed amount and quality of accomplishment, an accepted yardstick with which performance can be measured. A standard of performance may be based upon cost, the output of effort or the public health effect of this effort.

21. **Standard or Unit of Measurement**—A known quantitative element or component of an operation which is recognized as a completed step, process, or action.

American Public Health Association

COMMITTEES 1959-1960

There is no better introduction to the listing of the Association's committees, subcommittees, and study groups than an acknowledgment of the work of the hundreds of members and Fellows who serve on the committees and those who have served in the past.

Among the committees and groups listed are those concerned with the formulation of policy and guidance of the complex administrative affairs of the Association and of the sections, as well as those carrying forward the scientific and educational aspects. A cursory glance at the listing reveals the range of Association interests and activities and the major concerns of the public health profession today.

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CALIFORNIA, SOUTHERN, PUBLIC HEALTH ASSOCIATION, Dorothea Hansen, City Health Dept., Los Angeles 12
COLORADO PUBLIC HEALTH ASSOCIATION, Alice de Bruyn Kops, 4660 S. Delaware, Englewood
CONNECTICUT PUBLIC HEALTH ASSOCIATION, Shirley Thayer, R.N., 61 Arnold Way, West Hartford 7
CUBAN PUBLIC HEALTH SOCIETY, Dr. Raphael Calvo Fonseca, Calle 19 No. 511 Altos Vedado, Havana
FLORIDA PUBLIC HEALTH ASSOCIATION, Everett H. Williams, Jr., P. O. Box 210, Jacksonville
GEORGIA PUBLIC HEALTH ASSOCIATION, Carl Fox, 33 Pryor St., N.E., Atlanta
HAWAII PUBLIC HEALTH ASSOCIATION, Alison MacBride, R.N., 510 S. Beretania St., Honolulu 13
IDAHO PUBLIC HEALTH ASSOCIATION, Charles Hammond, P. O. Box 640, Boise
ILLINOIS PUBLIC HEALTH ASSOCIATION, William J. Hixon, Evanston Health Dept., Evanston
INDIANA PUBLIC HEALTH ASSOCIATION, Malcolm J. McLelland, State Board of Health, Indianapolis
IOWA PUBLIC HEALTH ASSOCIATION, Lloyd Coe, Iowa Hospital Association, 1012 Liberty Bldg., Des Moines
KANSAS PUBLIC HEALTH ASSOCIATION, W. W. Wilmore, Kansas Tuberculosis and Health Assn., 1134 Topeka Ave., Topeka
KENTUCKY PUBLIC HEALTH ASSOCIATION, Peggy Fisher, 620 S. Third St., Louisville 2
LOUISIANA PUBLIC HEALTH ASSOCIATION, Lucille Godelfer, State Dept. of Health, New Orleans 7
MARYLAND PUBLIC HEALTH ASSOCIATION, Mary Thompson, Prince Georges County Board of Education, Upper Marlboro
MASSACHUSETTS PUBLIC HEALTH ASSOCIATION, Mrs. Elizabeth K. Caso, Dept. of Health, Cambridge
MICHIGAN PUBLIC HEALTH ASSOCIATION, Marjorie Delevan, 1817 West St. Joseph Street, Lansing
MINNESOTA PUBLIC HEALTH ASSOCIATION, D. S. Fleming, M.D., State Dept. of Health, University Campus, Minneapolis
MISSISSIPPI PUBLIC HEALTH ASSOCIATION, H. E. Boone, P. O. Box 1700, Jackson
MISSOURI PUBLIC HEALTH ASSOCIATION, Mrs. Nadia Craver, 5th Fl., State Office Bldg., Jefferson City
MONTANA PUBLIC HEALTH ASSOCIATION, Thomas S. Willett, Montana Public Health District 1, Hardin
NEBRASKA PUBLIC HEALTH ASSOCIATION, George R. Underwood, M.D., 935 R. St., Lincoln, Neb.
NEW JERSEY PUBLIC HEALTH ASSOCIATION, Waldo McNutt, M.P.H., Delaware River Drive, Frenchtown
NEW MEXICO PUBLIC HEALTH ASSOCIATION, Daniel T. Marley, P. O. Box 8066, Albuquerque
NEW YORK CITY, PUBLIC HEALTH ASSOCIATION OF, Frances Ann McVey, 4317 Robinson St., Flushing 55, N. Y.
NEW YORK STATE PUBLIC HEALTH ASSOCIATION, Mrs. Kathleen Boland, Rensselaer County Health Dept., Troy
NORTH CAROLINA PUBLIC HEALTH ASSOCIATION, Robert W. Brown, Box 7525, Asheville
NORTH DAKOTA PUBLIC HEALTH ASSOCIATION, Alice H. Peterson, M.D., State Dept. of Health, Bismarck
OHIO PUBLIC HEALTH ASSOCIATION, Mrs. June O'Donnell, 3516 Braddock St., Dayton
OKLAHOMA PUBLIC HEALTH ASSOCIATION, Marjorie Butler, 3400 North Eastern, Oklahoma City
OREGON PUBLIC HEALTH ASSOCIATION, Muriel David, City Bureau of Health, 203 N.E. 28th Ave., Portland
PENNSYLVANIA PUBLIC HEALTH ASSOCIATION, Emma J. Petach, R.N., 324 N. Second St., Harrisburg
PUERTO RICO PUBLIC HEALTH ASSOCIATION, Mrs. Mae de Acin, Apartado 211, San Juan 2
SOUTH CAROLINA PUBLIC HEALTH ASSOCIATION, Mrs. Laura M. DeMarse, State Health Dept., Columbia
SOUTH DAKOTA PUBLIC HEALTH ASSOCIATION, Alice Brady, R.N., State Dept. of Health, Pierre
TENNESSEE PUBLIC HEALTH ASSOCIATION, C. B. Tucker, M.D., State Dept. of Health, 420 Sixth Ave., N., Nashville
TEXAS PUBLIC HEALTH ASSOCIATION, Joseph N. Murphy, Jr., State Dept. of Health, Austin
UTAH PUBLIC HEALTH ASSOCIATION, Katherine Brandon, M.D., P. O. Box 25, Foothill Station, Salt Lake City
VIRGINIA PUBLIC HEALTH ASSOCIATION, Mrs. Helen W. Wiesmann, 1220 E. Broad St., Richmond
WASHINGTON STATE PUBLIC HEALTH ASSOCIATION, Caesar Branchini, General Electric Company, Richland
WEST VIRGINIA PUBLIC HEALTH ASSOCIATION, Mrs. Katherine L. Brown, West Virginia State Dept. of Health, Charleston 5
WISCONSIN ASSOCIATION FOR PUBLIC HEALTH, Paul Weis, 1 W. Wilson St., Madison
MIDDLE STATES BRANCH, APHA, Thelma Luther, Dept. of Health, Des Moines, Iowa
SOUTHERN BRANCH, APHA, Guy Tate, Jr., Jefferson County Health Dept., Birmingham, Ala.
WESTERN BRANCH, APHA, Robert G. Beaumier, 1309 Smith Tower, Seattle, Wash.

Dakota Wants Medical Health Officer

The new editors of the North Dakota Public Health Association Newsletter, John K. Peterson and Lois Williamson, have reported in the May-December issue on the 1959 annual meeting held in Grand Forks, April 6-7.

Two resolutions were carried dealing with North Dakota health and hospital problems. One resolution, taking note of the fact that the state has been without a medical health officer for more than six years, urged the State Health Council to "exert every effort to secure a well qualified doctor of medicine, with an intense interest in and/or training in public health and with a salary commensurate for the position."

The second resolution, based on the fact that the state mental hospital in advertising for a certified mental hospital administrator does not include a requirement for certification in psychia-

try, requests that the State Board of Administration appoint a superintendent with certification in both psychiatry and mental hospital administration. The resolution points out that the present acting superintendent has these qualifications. It suggests further that he or a similarly qualified physician be given permanent appointment, in accordance with the standards and policies of the American Psychiatric Association for mental hospitals.

Among the action taken at the business sessions was the selection of Fargo as the 1960 meeting place on May 16-17. It was reported that NDPHA fully complies with the requirement that its membership include a minimum of 75 per cent of APHA members in the state. The term of the secretary was made a minimum of three years; a Committee on Constitution and By-Laws was appointed; a continuing study committee to spell out objectives was appointed.

Ed Sypnieski was the retiring president. New officers are:

President—Goodwin Hoff, Fargo

President-Elect—William E. Unti, executive director, North Dakota Society for Crippled Children and Adults

Vice-President—Frank Gilchrist, Mandan

Secretary-Treasurer—Alice Peterson, M.D., director, Maternal and Child Health Division, State Department of Health

Representative to APHA—Margaret Watts, director, Division of Vital Statistics, State Department of Health.

Ohio: New Section, New Committee

Thirty-three health commissioners in Ohio won unanimous approval for their petition to the Executive Committee of the Ohio Public Health Association asking that a health officers section be established in OPHA. The health officers drew up and signed the petition during Ohio's 40th Health Commissioners' Conference in September. Other action relating to OPHA taken by the 98 health commissioners at the conference included the appointment of a committee of commissioners and OPHA members to study the desirability of joint meetings for the two organizations in the future.

In the "President's Comment" column of OPHA's Newsgram (Autumn, 1959) T. A. Gardner, M.D., poses some of the questions that OPHA's new steering committee on association affairs "will probably want to consider:

"Can the Ohio Public Health Association realize its full potential membership of three or four thousand members, or must we always be an organization of fewer than one thousand members?

"Are the present five-dollar dues the main obstacle in attaining a size commensurate with the task of representing all (Ohio) public health workers effectively in all phases of public health?

"Are there weaknesses within the organization due to inadequate general sessions of the Annual Meeting, lack of strength with the various sections, or district organization?

"Can the organization become more active and serve more members with programs in addition to the regularly scheduled district and annual meetings?"

One of the charges to the steering committee, chaired by Robert C. Adams, D.V.M., is study of ways in which OPHA's representative to APHA can be of most value to both organizations.

Physical Fitness in Connecticut

Meeting in its 43rd year (Wethersfield, Conn., November 18, afternoon and evening) the Connecticut Public Health Association's first discussion on the agenda was a symposium on "How Healthy Is Connecticut's Youth?" Alice I. Donnelly, Ed.D., head of the Danbury State College Health and Physical Education Department, chaired the meeting. Martha L. Clifford, M.D., M.P.H., chief, Community Health Services, Connecticut State Health Department, and outgoing president of the CPHA, presided.

Dr. Donnelly announced Governor Ribicoff's intention of forming a com-

mittee that will assist in a desirable upgrading of the physical fitness of all people in Connecticut. The governor's concern stems from the report of a two-year study conducted under the direction of Dr. Donnelly which showed that the state's youth was not up to as high a par of physical strength as it should be. Other symposium members were Alfred E. Sholz, instructor in physical education, Yale University; Matthew Barberi, supervisor of physical and health education, Hamden Public Schools; and Mila Rindge, M.D., epidemiologist, Connecticut State Health Department. They were joined by Ruth V. Byler, Ed.D., consultant, Health and Physical Education, Connecticut State Department of Education, and Mrs. Robert Donnelly, secretary, CAHPER, as resource persons.

Frank D. Gray, M.D., associate professor of medicine and director of cardiopulmonary service, Yale-New Haven Medical Center, then spoke on exercise and heart disease. Alfred L. Burgdorf, M.D., M.P.H., director of health, Hartford, summarized the afternoon sessions. At the early dinner meeting Thomas R. Hood, M.D., deputy executive director, representing the APHA, carried greetings to its Affiliated Society.

M. Allen Pond, M.P.H., Assistant U. S. Surgeon General, received the annual C-E. A. Winslow Award for outstanding contribution to the field of public health in the state. Following the award presentation Franklin M. Foote, M.D., Dr.P.H., new commissioner of health for Connecticut, briefly outlined some of the future plans for the State Health Department.

From 7:30 to 9:00 p.m. discussion groups held simultaneous meetings on a variety of current public health interests: low cost exhibits, led by Horace Brown, M.P.H., executive director, Connecticut Heart Association; detergents and the water supply, led by Frederick O. A. Almquist, principal sanitary engineer, Connecticut State Department of Health; chromatography and paper electrophoresis, led by John J. Egan, laboratory director, Connecticut Milk Producers Association; and communicable disease, led by James C. Hart, M.D., director, Division of Preventable Diseases, Connecticut State Health Department. Louis Spekter, M.D., M.P.H., chief, Maternal and Child Hygiene Section, Connecticut State Health Department, gave a progress report on the work of the governor's committee on children and youth. A synopsis of the recent New England Institute on Public Health and Behavioral Sciences and its implications for Connecticut was presented by Harold S. Barrett, M.D., M.P.H., deputy commissioner, Office of Public Health, Connecticut State Health Department.

At the business meeting which preceded the symposium Dr. Clifford announced that Erval R. Coffey, M.D., director of health, Department of Health, Greenwich (Conn.), had been appointed CPHA's liaison representative with the Washington office of APHA. She also reported on the activities of the joint CPHA and Connecticut Health League's ad hoc committee which has been studying the related functions of the two organizations. The committee reported that there is need for both; CPHA is also to further explore the area of "salaries and personnel practices relative to public health personnel in the state." During the year a CPHA committee has developed and published a public health careers booklet for distribution throughout the state. (Each of the Affiliated Societies and Regional Branches has now received a copy.)

Officers for 1960 are:

President—Stanley E. Wedberg, Ph.D., head, Department of Bacteriology, University of Connecticut, Storrs

President-Elect—Harold S. Barrett, M.D., M.P.H., deputy state health commissioner, Manchester

Vice-President—Dorothy Y. Kirk, M.P.H., R.N., health education worker, New Haven Health Department

Treasurer—Jerry Skopek, Ph.D., director of laboratories, Hartford Health Department

Secretary—Shirley A. Thayer, R.N., M.P.H., supervisor, Hartford Visiting Nurse Association.

14 Committees at Work in Oklahoma

The Oklahoma Public Health Association has 14 Standing Committees. Representatives from each reported to and deliberated with the Executive Committee of OPHA at its September meeting.

At this meeting, the program committee recommended "Public Health—A Public Service" as the theme for OPHA's annual meeting (March 9-11, Oklahoma City). The legislative committee presented an organizational plan for "informing the public truthfully and actually regarding the stabilizing of health department financing" which would draw for assistance on local people "outside the official family" (the OPHA Journal for October, 1959 contains an organizational chart and outline for the plan). All 14 committees are active and some are conducting projects. For example, a sanitation subcommittee will undertake to evaluate the environmental sanitation surveys being made in cities and towns in the state.

OPHA now has approximately 353 members, 73 of whom belong to the APHA. Its quarterly Journal is in the third year of publication. Mozelle Ewing, R.N., Muskogee County Health Department, is president.

Southern Branch Nursing Report

The report of the 9th Annual Field Teaching Conference (Miami, Fla., May 25-26, 1959) of the Public Health Nursing Section, Southern Branch, APHA, is now in print. Its 74 pages (plus three appendixes) include reports on the Oklahoma and Alabama projects, the "North Carolina plan," and a panel discussion on the "Evaluation Process During Field Experience in Public Health Nursing," with a summary of five group discussions on this topic. Available from the conference chairman, Ruth W. Hay, professor of public health nursing, University of North Carolina School of Public Health, Chapel Hill; one dollar.

APHA membership application blank on page XXIX

Radiological Health Courses

New York University's Department of Industrial Medicine offers two courses in radiological health intended for persons, already trained in one of the physical, engineering, biological, or medical sciences, who require a comprehensive introduction to radiological hazard evaluation. In "Medical and Public Health Control of Ionizing Radiation" (full time, March 7-18, 1960) primary emphasis will be on the biological effects of radiation and medical control programs. (Specifically designed for public health officials, physicians, and others with biological interests.) "Radiation Hygiene Measurements" (a four-week intensive course, April 18-May 13) will offer laboratory instruction in surveying, monitoring, and sampling procedures for persons having some acquaintance with nuclear measurement principles. For further information: Associate Dean, New York University Post-Graduate Medical School, 550 Fifth Avenue, New York 16, N. Y.

EMPLOYMENT SERVICE

The following pages present information for those seeking public health personnel and for those seeking positions in public health. Other information concerning vacancies and personnel available is on file in the Association office. Anyone wishing to have the benefit of this additional information can obtain it by writing to the Vocational Counseling and Placement Service of the Association.

Advertising space in these pages is available at special rates for the use of employers or individuals. The charges are $5 for the first 50 words or fraction thereof and $1 for each additional 10 words or fraction thereof. There is no charge to members or Fellows of the Association who desire to utilize the **Positions Wanted** portion of these pages. **Closing date** for receipt of advertisements is the first of the month preceding the desired month of publication. **All correspondence should be sent to the American Public Health Association, 1790 Broadway, New York 19, N. Y.**

POSITIONS AVAILABLE

Public Health Officer I—Vacancy on the island of Kauai. Requires two years of experience as a physician, graduation from a medical school of recognized standing, and one year of graduate work in public health. Salary: appointments to be made at any step within the range of $796-$1,067 per month. Write for further information and application to the Department of Civil Service, State of Hawaii, 825 Mililani St., Honolulu 13, Hawaii.

Local Health Officer—Hammond, Ind. (population 108,000). Well established local health department. Salary $16,000. Prefer person with M.P.H. but will consider someone with public health experience. Valid license to practice medicine in the state of Indiana. Apply to Dr. F. F. Premuda, Hammond Health Department, City Hall, Hammond, Ind.

Public Health Physician—in New Mexico Department of Public Health. Salary range $9,000-$12,600. Fringe benefits. Excellent opportunity for young man. Contact Merit System Council, 122 Capitol Pl., Santa Fe, N. M.

Public Health Physician (Chief, Division of Chronic Diseases)—To direct an expanding chronic disease program in a state health department. Monthly salary range $1,100-$1,320. Requires physician with specialized training and experience, and eligibility for Ohio license. Write Director, Ohio Department of Health, Columbus 15, Ohio.

Public Health Physician (District Health Officer)—Various locations available in Wisconsin. Act as medical public health administrator of district area; district epidemiologist; plan, organize, supervise work of professional staff consisting of engineers, nurses, sanitarians, nutritionist, dental hygienist, health educators, and social workers. M.P.H. degree, public health experience, and eligibility for license to practice medicine in Wisconsin required. Salary $12,156-$14,976, plus travel allowance. Civil service, vacation, sick leave, Social Security, retirement, group health and life insurance benefits. Write Dr. E. H. Jorris, Assistant State Health Officer, 400 State Office Bldg., Madison 2, Wis.

Director, Local Health Services—Wisconsin. Work with the state health officer and professional staff in improvement of local health services. M.P.H. degree and eligibility for license to practice medicine in Wisconsin required. Salary $1,013-$1,248, commensurate with experience. Write E. H. Jorris, M.D., Assistant State Health Officer, 400 State Office Bldg., Madison 2, Wis.

Director, Bureau of Maternal and Child Health—Plans and directs a state-wide program for the conservation and improvement of maternal and child health; coordinates and supervises the activities of the bureau. Major activities include the child guidance, school health, and nutrition programs. Desirable qualifications and experience: M.P.H., one year of experience in private practice, five years of experience in public health work, three years of which shall have been in an administrative capacity. Pediatric training desirable. Eligibility for license to practice medicine in Wisconsin required. Salary starts at $1,123 per month, with annual merit increases of $40 to $1,298. Civil service, vacation, sick leave, Social Security, retirement benefits. Group life, hospital, and sickness insurance costs shared by the state. Write E. H. Jorris, M.D., Assistant State Health Officer, 1 West Wilson St., Madison 2, Wis.

Executive Director — Combined public health nursing agency. Education and experience in public health nursing, including supervisory experience. Have well qualified health officer. Salary open. Five-day, 40-hour week, month's vacation, and liberal personnel policies. Capital city, population 216,000. Public Health Nursing Association, Des Moines, Iowa. Write Mrs. J. R. McNerney, Personnel Committee, 521 16th St., West Des Moines, Iowa.

CLINICAL RESEARCH

Prominent Eastern pharmaceutical company desires young MD — preferably board eligible in Internal Medicine or Psychiatry — capable of establishing and monitoring programs in therapeutic research. This position represents a unique opportunity for creativity and personal growth within the specialty. Additionally, it provides ample opportunities for travel to important conferences and academic centers and for association with outstanding authorities.

Ideal suburban living and working conditions, excellent salary and benefits. Our staff is aware of this advertisement.

Send curriculum vitae to

Box A-27

56 W. 45th St., N. Y. 36, N. Y.

Staff positions: Immediate openings for qualified **Public Health Nurses,** $5,004-$6,072; **Professional Nurses with degree,** and **Physical Therapists,** $4,764-$5,784; **Professional Nurses,** $4,536-$5,508; **Practical Nurses,** $3,384-$4,116. Liberal personnel policies, pension plan. For information write Visiting Nurse Service of New York, Department H, 107 East 70th St., New York 21, N. Y.; telephone LE 5-1100.

Public Health Nursing Consultant (Assistant to Director of Public Health Nursing in State Health Department)—Give consultation to public health personnel in all phases of public health nursing, including in-service education; prepare manuals, guides, etc., for public health nurses; assist in administration of program. Bachelor's degree in public health nursing minimum preparation; master's degree desirable; four years' experience in public health nursing, including two in administration or supervision. Salary: start at $6,756, maximum $8,076. Civil service, vacation, sick leave, Social Security, and retirement benefits. Write Miss Ione M. Rowley, R.N., Director, Public Health Nursing, 119 Monona Ave., Madison 3, Wis.

Public Health Nurse—Generalized. Salary $384-$466; mileage. Retirement plan, other benefits. High, dry climate, four seasons; center of northern Arizona recreation area. Merit system. Write Merle E. Smith, M.D., M.P.H., Director, Coconino County Health Department, Flagstaff, Ariz.

Public Health Nurse III (District Advisory Nurse)—Give guidance and counseling to all public health nurses in a multiple-county area regarding community organization and relationships, program planning, public health nursing technics, records, and reporting. Responsible for inservice education program for local public health nurses and evaluation of nursing services. Salary range $5,676-$6,756, plus travel allowance. B.S. degree with major in public health nursing and three years' generalized experience as a public health nurse. Special requirement: registration or eligibility therefor as a registered nurse in Wisconsin; certification or eligibility for certification as a public health nurse in Wisconsin. Write R. J. Siesen, Personnel Officer, State Board of Health, Madison 2, Wis.

Industrial Hygiene Engineer—Wanted by the Los Angeles County Health Department for immediate placement. Requirements include a bachelor's degree in chemical, civil, or mechanical engineering, and three years' experience in industrial health engineering. California State Certificate of Registration as chemical, civil, or mechanical engineer, and California motor vehicle operator's license required at time of appointment. Acceptable substitutes: (1) one year of graduate work in public health for one year of the experience, (2) two years as an engineer in ventilating and air conditioning for two years' experience. Salary $641, with yearly increases. Apply County of Los Angeles Civil Service Commission, 501 North Main St., Los Angeles 12, Calif.

Engineer—B.S. degree for public health work. Desirable suburban location, modern air-conditioned building. Apply Director, Clay County Health Department, Liberty, Mo.

Sanitarians—Higher salaries are being offered to qualified sanitarians by the Public Health Services, Philadelphia Department of Public Health. New employees will start at $5,348. Liberal fringe benefits. For information call Mr. Mullin at LO 7-0290, or write Room 504, City Hall Annex, Philadelphia 7, Pa.

Health Educator—With initiative and imagination, to plan and carry out 3½-year research project on child accident prevention in progressive, suburban Rockland County, N. Y., 30 miles from New York City. Possible permanent employment. M.P.H. and two years' experience. Salary $7,250, with annual increases. Write Donald G. Dickson, M.D., Health Commissioner, 8 North Main St., New City, N. Y. (Rockland County).

Public Health Educator III—Initiate and develop school-community health education programs in a multicounty district. Desirable qualifications: M.P.H. degree, plus two years' experience in health education; sound working knowledge of principles of education and methods of teaching. Salary $503-$598 per month. Travel allowance, vacation, sick leave, retirement, group insurance plans. Write Dr. Amy L. Hunter, Director, Bureau of Maternal and Child Health, Wisconsin State Board of Health, Madison 2, Wis.

Dental Health Educator—to work on dental education program and examinations in city schools. Salary dependent upon experience and qualifications. Vacation, sick leave, Social Security, and retirement benefits. Apply La Crosse City Health Department, City Hall, La Crosse, Wis.

Mental Health Educator—for national office staff, to develop education programs and consult on mental health educational content. Education and experience in mental health work required. Excellent employment benefits. Send résumé and date of availability to Education Service, National Association for Mental Health, 10 Columbus Circle, New York 19, N. Y.

Public Health Educator III (Dental Hygienist) — Assist in developing dental health programs for preschool and adult groups in a several county area. Coordinate dental health education activities with over-all health education program. College graduation, a year of graduate training in an accredited school of public health, and two years' experience. Licensure or eligibility for licensure to practice dental hygiene in Wisconsin essential. Salary starts at $6,036; maximum $7,176. Civil service, vacation, sick leave, Social Security, and retirement benefits. Write R. J. Siesen, Personnel Officer, State Board of Health, 400 State Office Bldg., Madison 2, Wis.

Psychiatric Social Worker—Salary range $6,672-$7,728. Newly created position. New mental health education program in the city of Berkeley Public Health Department. Staff consists of part-time psychiatrist, supervising program, one full-time psychiatric social worker, and one part-time health educator. The program will provide psychiatric and social work consultation to staffs of local health and welfare and related agencies, including the schools, as well as providing a community-wide program of mental health education and information. Requirements are two years of graduate study in social work in a recognized school of social work and completion of two years' full-time paid experience in a psychiatric setting, including at least one year in a supervisory, administrative, or consultative capacity. Liberal employee benefits. Applications will be accepted until appointment is made. Apply to the Personnel Director, Room 19, City Hall, Berkeley 4, Calif.

Social Work Administrator—State Board of Health, Child Guidance Division, Madison 2, Wis., Amy L. Hunter, M.D. Creative pioneering opportunity for mature, experienced social worker. Plan and integrate social work facets of public health program for prevention of emotional health problems; team approach in organization and coordination of various state-wide educational and consultation projects, including inservice training of state and local public health personnel and other professionals; education of lay groups; emphasis on discussion process to increase understanding and enhance constructive attitudes supportive of primary prevention; supervise several social workers serving on a district level in the above program. Headquarters: Madison. Requirements: M.S.W.; minimum of five years' relevant experience, mainly in community child guidance clinic team, including two years as a social work supervisor. Salary $7,356-$8,736.

Biostatistician—for school of public health in eastern United States. To assist in the design and evaluation of research projects in problems of chronic illness and medical care. Faculty appointment for Ph.D. in statistics, though a master's degree will be considered. Salary $7,200-$8,400. Apply to **Box ST-21,** Employment Service, APHA.

Public Health Statistician—Develop and conduct statistical program with City Health Department serving 200,000, including complete statistical analyses for program planning and consultation to staff and community. M.P.H. or related statistical work plus experience desirable. Liberal employee benefits. Salary $5,356-$6,526. Write W. B. Prothro, M.D., M.P.H., Health Department, Grand Rapids 2, Mich.

Dental Hygienists—Must have M.P.H. degree and preferably some public health work experience. Salary $460-$575. Civil service; Social Security and state retirement coverage. Write Mr. Alfred T. Johnson, Personnel Director, Oregon State Board of Health, P. O. Box 231, Portland 7, Ore.

Physical Therapist—Licensed to practice in Virginia for Visiting Nurse Association. Give physical therapy treatments in the home. Auto furnished: five-day, 40-hour week. Salary open. Apply Mrs. Randall Everett, President, Visiting Nurse Association, 3905 North Pershing Dr., Arlington, Va.

Associate Laboratory Director—in charge of County Public Health Laboratory under part-time pathologist. Minimum training: Ph.D. or Dr.P.H. in microbiology and knowledge of work in public health laboratory. Minimum experience: Two years' satisfactory experience in public health laboratory work or equivalent. Salary $8,820-$10,296. Apply Cattaraugus County Health Department, Box 573, Olean, N. Y.

Psychiatrists—(1) Chief, Alcoholic Rehabilitation Division. (2) Chief, Legal Psychiatric Services Division. This clinic serves the law-enforcement agencies of the District of Columbia. (3) Chief, Adult Mental Health Division. Salary $12,555. Federal government retirement, insurance, and leave privileges. Write Director of Public Health, D. C. Department of Public Health, 300 Indiana Ave., N.W., Washington 1, D. C., Attn.: Chief, Bureau of Mental Health.

Medical Health Officer—for established rural county health department in central Michigan. Population approximately 50,000. Good personnel policies and vacation. Salary open, depending upon qualifications and experience. For further information write to Shiawassee County Health Department, Court House, Corunna, Mich.

Physiatrist—Opening for Board certified or eligible specialist in physical medicine for director of community rehabilitation center. Fine growth possibilities. Salary open, commensurate with experience and training. Send complete details, including salary request, to Robert A. Silvanik, Rehabilitation Center, 326 Locust St., Akron 2, Ohio.

Public Health Nursing Supervisor and Public Health Nurse—to join young, well qualified staff in active generalized program. Teaching center for collegiate students. Public health preparation required. Starting salary: Supervisor $5,600; Staff Nurse $4,860. Apply Director, Eaton County Health Department, Charlotte, Mich.

P.H.N. Hospital Coordinator—employed by the Madison Visiting Nurse Service. Position available June 1, 1960. Good personnel policies and salary. Qualified P.H.N. with at least two years' P.H.N. experience. Teaching experience desirable. Write Miss Ruth E. TeLinde, Director, Madison Visiting Nurse Service, 2059 Atwood Ave., Madison 4, Wis.

Bacteriologist—Two vacancies: one for Bacteriologist-in-Charge, Northwest Branch Laboratory located at Bowling Green State University, Bowling Green; the other for Parasitologist-Bacteriologist, Central Laboratory. Salary $460-$550 monthly. College degree plus experience required. Apply to Chief, Division of Laboratories, Ohio Department of Health, Columbus 10, Ohio.

Health Educator—Desirable qualifications: formal training and experience in public health; sound working knowledge of community organization. Salary open, depending on qualifications. Generous mileage and expense allowances, vacation, sick leave, retirement policies. Write Rosalyn Mervis, Director of Health Education, Tuberculosis League of Pittsburgh, 2851 Bedford Ave., Pittsburgh 19, Pa.

POSITIONS WANTED

On Box Numbers, Address APHA at 1790 Broadway, New York 19, N. Y.

Tuberculosis or Internal Medicine—Age 52, citizen. Twenty years as clinical director and administrator of recognized tuberculosis hospitals. Experienced in public health (tuberculosis) and direction of medical student, intern, resident, and affiliating student nurse programs. Basically a specialist in chest diseases, but fully qualified in internal medicine. Equable winter climate preferred. Available now. **Box PH-99,** Employment Service, APHA.

Bacteriologist — Ph.D., age 39. Public health oriented. Desire position as chief or assistant chief of public health laboratory, or affiliation with medical or public health school. Experienced teacher, researcher, and administrator. **Box L-71,** Employment Service, APHA.

Health Statistician — Ph.D. candidate, completing degree requirements by summer 1960. Male, married, age 26. Extensive course work in biostatistics, mathematics, mathematical statistics, demography, epidemiology, and I.B.M. machine methods. Two years' experience in medical and mental health research and statistics. **Box ST-22,** Employment Service, APHA.

Physician — M.P.H., University of Minnesota. Fifteen years' experience in public health, four years of which were with the Pan American Sanitary Bureau. Technical publications. Bolivian, age 47. Desire position in the United States or abroad for which U. S. citizenship and Board certification are not required. **Box PH-1,** Employment Service, APHA.

Bacteriologist—Male; M.S. Desire position in the southwest or the New England States. Well versed in diagnostic bacteriology, parasitology, and sanitary bacteriology, with nine years of experience. **Box L-72,** Employment Service, APHA.

Commercial Advertisements

All communications on the following commercial advertisements should be sent to Burneice Larson, Medical Bureau, Suite 605, 900 North Michigan Avenue, Chicago 11, Ill.

OPPORTUNITIES AVAILABLE

(a) County health officer, ideal college town, California; $10,000-$14,000. (b) Health officer; five years' experience desirable; university city, East; $10,000-$13,000. (c) Commissioner of health; staff of 14; public health degree required; college town, Midwest; $10,000-$12,500. (d) Welfare medical director; interested in medical aspects of program; large city between New York and Boston. (e) Research biochemist, experienced in use of radioisotopes; study resistant arthropods in communicable disease center; to $10,500; (f) Public health nurse; direct combined agency; 30 on staff and capable assistant; $8,000-$9,000, Midwest. (g) Public health nursing instructor; fully accred. college, 4,000 enrollment; nine months; $550-$750 month, start, maximum ranging to $10,000 annually; South. (h) Public health nurse for foreign assignment, work with natives and United States personnel; $5,000-$11,000; RN 2-6.

SITUATIONS WANTED

(a) Medical director, national health organization; 20 years' experience in development of health procedures, administration, research. (b) Public health nurse administrator, B.S., M.A. public health, Columbia University; five years, city-county health department; seven years, director, community health center.

White House Conference Publications

Seven volumes of background material dealing with problems of children and youth are now offered for sale by the 1960 White House Conference on Children and Youth. These works contain the same data that will be used by 7,000 participants at the conference (March 27-April 2).

"The Nation's Children" is the title of three volumes ($6.00), edited by Eli Ginzberg, Ph.D., chairman of the Conference Studies Committee. "Children In A Changing World" ($1.25) is a book of 70 charts prepared by the Federal Interdepartmental Committee on Children and Youth. "State Reports Digest" ($1.50) is a national inventory of unmet needs in the states. Major national organizations engaged in national stock-taking for the Conference have provided evaluative reports in "National Organizations Digest" ($1.50). "Conference Proceedings," to be published in July ($2.25), will contain guides for citizen action at state and local levels to meet the needs of children and youth.

The volumes can be ordered from the Publications Division, White House Conference Headquarters, 330 Independence Avenue, S.W., Washington 25, D. C. Prices quoted are special preconference prices in effect only until March 1, 1960; postage and handling extra.

BOOK REVIEWS

All reviews are prepared on invitation. Unsolicited reviews cannot be accepted.

ADOPTION OF CHILDREN—By the Committee on Adoptions of the American Academy of Pediatrics. Evanston, Ill.: American Academy of Pediatrics (1801 Hinman Ave.), 1959. 60 pp. Price, $1.00.

The Academy of Pediatrics should be congratulated for presenting, through its Committee on Adoptions, this clarifying pamphlet on the many questions involved in a consideration of adoption. This pamphlet presents clearly and succinctly the basic principles involved in adoption. The report accepts the premise that a child needs the intimate relationships of family life, and when he cannot be reared in the home of his natural parents, an adoptive home will provide him with the affection, security, and understanding needed for his best development. A sound statement is made as to which children can most suitably be adopted as contrasted with those who should not be considered for adoption.

The report summarizes well the services needed by and available to the natural parents and points up the rights, obligations, and responsibilities of the parents. Other sections deal with the services needed by the child and the adoptive parents. Questions relating to placement, such as race, religion, personalities, intellectual capacities, and physical handicaps are answered specifically. The value of careful selection of the adoptive home and the need for a period of supervision by a qualified child welfare agency are recommended.

Perhaps the most essential chapter in the pamphlet is on the "Physician's Role in Adoptions." Here the academy has presented to the medical profession the responsibilities required of physicians, whether the physician be an obstetrician, pediatrician, family physician, general practitioner, or psychiatrist. These responsibilities are defined according to whether the physician provides care to mother, child, or family; serves as a consultant to a social agency; is a member of a hospital staff, an educator, or is fulfilling his responsibility as a citizen.

Other chapters provide an excellent evaluative statement of adoptive services in the community and the laws relating to adoptions. The increasing problem of interstate and intercounty adoption is presented, and helpful guideposts recommended by International Social Service are included. The final chapters give a glossary of terms used in relation to adoption practices and a very good bibliography; the pamphlet is also carefully indexed.

This report will be a useful reference for all physicians and public health personnel and can serve as the basis for policies and programming within any services for children or families.

ELIZABETH P. RICE

I.E.S. LIGHTING HANDBOOK (3rd ed.). THE STANDARD LIGHTING GUIDE—New York, N. Y.: Illuminating Engineering Society (1860 Broadway), 1959. 1100 pp. Price, $10.00.

This handbook is the most comprehensive book on the subject of lighting, containing both basic information and highly technical and detailed data. This edition presents much new information not available in other editions.

The volume contains essential information on light and lighting in terms that can be read and understood easily; its scope is very broad and many subjects are discussed. Of principal interest and importance to public health people are the sections on Physics of Light, Light and Vision, Measurement of Light and Other Radiant Energy, Lighting of Of-

fices and Schools, Lighting of Institutions and Public Buildings, Lighting of Industries, and Residential Lighting. The back of the book includes many useful tables and formulas.

Each chapter is organized and written in an individual manner, making it possible to read and understand any chapter without necessarily reading the preceding chapters. The book contains many diagrams, charts, tables, and illustrations. A complete listing of references is given at the conclusion of each section.

This book should be in every public health department or school library, since it is a basic book on the field of light and lighting. Everyone concerned with environmental health and hygiene should be familiar with this handbook.

ERIC W. MOOD

CATALYTIC MODELS IN EPIDEMIOLOGY—By Hugo Muench. Cambridge, Mass.: Harvard University Press (44 Francis Ave.), 1959. 110 pp. Price, $4.50.

This monograph postulates that the rate of development of diseased individuals among well persons may be fashioned after the catalytic process in chemistry (which converts a fraction of reacting molecules during each time interval). The process makes use of the relative prevalence of two groups of individuals at various time periods.

After development of the simple catalytic model, an example shows how to fit such a curve to observed data by use of a nomogram. The language of the text is simple and each step fully explained. The model is then modified for the case where not all of the population eventually react to the process. This is applied to data on measles and whooping cough. This last model turns out to be of the same form that describes the catalytic process which works in two opposite directions simultaneously, viz., the reversible type of reaction.

Other variations on the basic model are introduced where there are two stages of change, from A to B and from B to C. Finally, models are considered where the rates of transition are allowed to vary, and such models are then applied to survival data among patients with hypertension.

The catalytic model employs concepts from the calculus. An early chapter outlines selected technics of this branch of mathematics, and an appendix is devoted to the mathematical solution of the various differential equations encountered throughout the monograph. A lack of calculus knowledge is no serious handicap in following the development of the models.

All the models considered are deterministic. Recent efforts in model building for epidemiology have concentrated on moving beyond deterministic explanations. The newer models, termed stochastic, introduce a chance factor and attempt to explain, more realistically, that which is occurring in nature. Nevertheless, by presenting herewith the refined products of his teaching experience over the years, the author makes a contribution. The book will help the reader new to this field to get an understanding of the forces that produce population change, and it may provide clues enabling the more experienced reader to devise more refined models which overcome the discrepancies of the simple one. It is to be regretted that this monograph was not published a number of years ago so that others, aside from the author's students, might have benefited.

BERNARD G. GREENBERG

EXPERIMENT PERILOUS—By Renee C. Fox. Glencoe, Ill.: The Free Press, 1959. 262 pp. Price, $5.00

Beautifully written, this monograph reports a year's observations of the stresses and reactions to stress of patients and physicians in a hospital ward for the treatment and investigation of

serious chronic disease. It is the work of a young sociologist, herself an expolio case, who lived and worked full time in the metabolic ward of a teaching hospital in a large New England city.

The patients on Ward F-Second were faced with the high probability of death, and Miss Fox describes in poignant detail how they adjusted to this prospect with laughter, prayer, development of interest in medical affairs, some hope, and a "deep, organized commitment to one another." The physicians were faced with failure and frustration of their goals, and we learn how they adjusted to these stresses through various forms of rapport with their patients and with each other. A chapter is also devoted to the role of the social scientist as an observer in a setting loaded with drama yet requiring objectivity.

This is a purely descriptive case-study of personal and interpersonal reactions in a small group. It is not quantitative, nor does it draw conclusions as to which forms of behavior yield the least human suffering. No clues are given on how the structure of a hospital ward or the larger dynamics of medical care organization in American society may be contributing to the stresses described or the adjustments of individuals to them. As a psychological dissection of stress, however, it enriches our understanding of behavior and may inspire research more specifically sociological, which will point the way to methods of social organization that may help to reduce human pain.

MILTON I. ROEMER

THE SCHOOL HEALTH PROGRAM — By Alma Nemir. Philadelphia, Pa.: Saunders (West Washington Square), 1959. 428 pp. Price, $6.00.

In its subtitle, this book is described as a textbook for teachers and for other professional personnel concerned with school health. This statement is true to a greater extent for teachers and nonmedical educational service personnel than it is for health service personnel in the school. The use of the book for improving the organization and administration of school health services is, therefore, rather limited since the chapters which deal with this aspect of the school health program are not as detailed or clearly outlined as those which cover the fundamentals of the school health program.

The chapters which discuss the specific health problems of school children should prove particularly valuable to teachers, because of the thorough treatment which the author gives them. Teachers with misgivings about children being in school with epilepsy should be reassured by Dr. Nemir's chapter on the subject.

As a text in the preparation of teachers, this publication should contribute much to a better understanding of the purposes of the school health program and its relationship to the total curriculum of the school. It should also be helpful in convincing teachers in service that their role in fostering and promoting a good school health program is a major contribution to the health, as well as the education, of children.

HELEN T. WATSON

POPULATION, GROWTH, AND ECONOMIC DEVELOPMENT IN LOW INCOME COUNTRIES—By Ansley J. Coale and Edgar M. Hoover. Princeton, N. J.: Princeton University Press, 1958. 389 pp. 59 Tables, 19 Charts. Price, $8.50.

This book on an increasingly popular and important subject, is based on a study by the Office of Population Research at Princeton University. Its principal focus is upon the question of the potential effect of a decreased birth rate on the economic growth of underdeveloped countries. India is used as the prime case study with Mexico and several other countries examined secondarily in terms of the conclusions. While it is recognized that many factors

contribute to a lowered mortality, hence a population increase in underdeveloped countries, the authors point out that the most important factor is public health activity. They conclude that although public health measures can be effectively introduced without significant social or economic changes, it is likely that effective economic development, itself, eventually will bring about a modern public health program.

It is maintained that a period of two to three decades of reduced fertility would result in about the same number of available workers as would otherwise be the case. This less fertile adult population, having fewer dependents, could invest more and gradually produce more. In turn, the total product would be divided among progressively fewer consumers, resulting in a higher average economic state. Beyond this it is hypothesized that higher average levels of consumption would result in better incentives and improved physiological capacity and in turn in even higher levels of consumption.

Despite its somewhat formidable title and the amount of statistical data presented, the volume is quite readable and forms a significant addition to the literature in a vitally important area of human study and concern.

JOHN J. HANLON

MENTAL HEALTH MANPOWER TRENDS—Joint Commission on Mental Illness and Health. Monograph Series No. 3—By George W. Albee. New York, N. Y.: Basic Books (59 Fourth Ave.), 1959. 361 pp. Price, $6.75.

This is the third in the series of monographs to be published as a result of the work of the Joint Commission on Mental Health and Illness. This is an excellent review of the manpower situation in the mental health field. Not only does Dr. Albee review the history of the training of the psychiatrist, psychologist, social worker, psychiatric nurse, and other allied professions, but he evaluates the current situation and the probable sources for recruitment of personnel for these fields. In turn, these are related to the upward population trend in the United States. He very carefully reviews the educational system in this country and points out the realistic difficulty in increasing the mental health personnel, unless there is a fundamental change and upgrading of education in the country.

There is an introduction by Dr. Jack Ewalt, director of the Joint Commission, which reviews the problems that are detailed in the book.

This book is a careful, scholarly appraisal of the past, present, and future trends of the manpower situation in this field. Dr. Albee does not give us any easy answers. This thought-provoking volume is recommended for anyone with an interest in mental health and illness.

DAVID S. SANDERS

THE SOCIAL WELFARE FORUM 1958—Official Proceedings, 85th Annual Forum, National Conference on Social Welfare. Chicago, Ill. May 11-16, 1958. New York, N. Y.: Columbia University Press (2960 Broadway), 1958. 311 pp. Price, $5.00.

The National Conference of Social Work meets annually to provide a "dynamic educational forum for the critical examination of basic welfare problems and issues." Its Official Proceedings are a selected collection of papers read at the conference which deal with general policy issues. Only a few of the more practice-oriented papers are included, since the conference also publishes separate collections of papers on Community Organization, Case Work, and Social Group Work.

The diversity of subjects is great. They range from the global Philip C. Jessup's Foreign Relations Begin at Home to technical problem-oriented essays like Kermit T. Wiltse's imaginative The Hopeless Family. It deals with chronic cases requiring help from many social agencies. Social work can be

justly viewed as the general practice field of the human helping professions.

Social work's concern with application of social science to social work is evident throughout the volume, particularly in the Edward C. Lindenman memorial lectures by Grace L. Coyle's Bridge Between Social Work and the Social Sciences, Jessie Bernard's Neo-Marital Program, and Lawrence K. Frank's Change Through Group Experience.

Social work has many "causes" which can and do inspire dedicated action. But broad social welfare issues are not the number one concern of professionally trained social workers. As Evelyn Burns points out, in a down-to-earth presidential address, social workers tend to concentrate on the intensive treatment of individuals and groups. The field of corrections, the field of public welfare, Social Security, and the other public social services that try to deal with the sociopsychological consequences of poverty have only a small proportion of the profession's fully trained workers. S. J. Roney, director of the Bureau of Public Assistance, who writes about this neglected frontier of the profession, states that there has been no decline of family breakdown in these ever more prosperous times. The number of divorced women increased eight times as fast as the total number of women in the population from 1900 to 1950. Similarly, there is an increase in the number of recorded illegitimate births. The American "welfare" state is far more a newspaper term than a reality.

JOSEPH W. EATON

WELFARE SERVICES IN A CANADIAN COMMUNITY—By D. V. Donnison. Toronto, Canada: University of Toronto Press, 1959. 200 pp. Price, $5.95.

This book is essentially a detailed description of the welfare services in an Ontario community of approximately 13,000 people. The word "welfare" is very broadly used and includes such diverse services as public assistance, unemployment insurance, churches, and service clubs. The description of services is meticulous but, according to the author's own description of the study, only minimal evaluation is attempted. This markedly reduces the value of the book. Its usefulness to the reader in the United States is limited unless his main interest is in the details of the organization of local community health and welfare services. For the public health professions, its usefulness seems to lie mainly in the contrast of Canadian services with those found in the United States. Interestingly enough, similarities markedly outweigh differences between the two countries.

A second area of usefulness is the book's fairly good (although seemingly unconscious) description of the community's power system. With these exceptions, the book cannot be recommended as very useful reading for most people in the public health professions.

HERBERT NOTKIN

THE VOLUNTEER AND THE PSYCHIATRIC PATIENT—Washington, D. C.: American Psychiatric Association (1700 Eighteenth St., N.W.), 1959. 123 pp.

This small volume is a report of a conference held in June, 1958, on volunteer services to psychiatric patients. The report summarizes extensive preconference preparation and conference consideration on the following topics:

1. Present status and objectives of volunteer programs for the treatment, care, and rehabilitation of the mentally ill.
2. Administrative responsibilities and personnel policies for the operation of volunteer participation.
3. Recruitment, selection and placement, training and recognition of volunteer workers.
4. Expanding opportunities for the utilization of volunteers with particular reference to the rehabilitation of patients in the community.

Consideration of the first three topics results in a summary of experience and

a useful handbook for the hospital director planning to initiate or to reorganize a volunteer program. The final chapter contributes a succinct statement of ten guiding principles for a volunteer program of services to the psychiatric patient.

The problems in the development of constructive volunteer programs of services to the psychiatric patient in the community are analyzed in the report based on topic 4. The general conclusion reached is that there is urgent need for creative experimentation and for the initiation of studies, scientifically based, of volunteer programs oriented to services of the patient in the community.

The appendixes are a valuable information source to those concerned with volunteer services. Included are: tables showing spread in this country of volunteers serving psychiatric patients, institutions concerned, and kinds of programs. A variety of source materials, such as data on medical care, disability insurance and workmen's compensation for volunteers, and tax deductibility of volunteers' expenses are given; as well as job descriptions for volunteer directors, an extensive bibliography, and available volunteer program manuals.

This reader found a significant weakness in the study. The report stresses the importance of using the volunteer's service as the unique contribution of an interested outsider who comes to help with the program, not to substitute for shortages in paid staff. However, background that is essential for review of volunteer services with the psychiatric patient, or delineation of the necessary services by paid staff who provide adequate service to the patient is not presented. That framework is necessary to define the pluses in services that fall within the proper function of the volunteer in the program. Without this basic differentiation, it would be difficult for the volunteer to be in a position to learn enough about unmet services to fulfill a major function of the volunteer cited in the report as: "to act to improve available services and meet unmet needs by sponsoring and supporting social legislation, budgets, . . ."

MARION F. LANGER

EPIDEMIOLOGY OF COMMUNICABLE DISEASES—Edited by Ahmed Mohamed Kamal. Alexandria, Egypt: Imprimerie du Commerce (Anglo Egyptian Bookshop), 1958. 567 pp.

This book was written primarily for the use of local medical and public health students. Only those communicable diseases important from the Egyptian point of view are discussed. These diseases are, however, of concern in other parts of the world, and the book should prove useful to a wider audience, especcially in areas with similar climatic, geographical, and socioeconomic conditions.

In the United States and Canada the book can be recommended to those schools of public health receiving students educated in Egypt. The faculty of these schools might wish to know details of elementary information and sometimes misinformation which the students may have. Furthermore, consultants in epidemiology of communicable diseases, proceeding to Egypt or neighboring countries, could undoubtedly read the book with profit to learn where they need to start.

The opening chapter briefly indicates the modern concept of epidemiological practice as applied to noninfectious and infectious disease, both in field research and in evaluation of public health practices. The remainder of the book is concerned only with the epidemiology of infectious diseases.

Succeeding general chapters give examples of the mechanisms involved in the spread of infectious diseases, a short discussion on immunity, and some principles on control of diseases including disinfection and disinfestation. Few would agree with the statements that immunity after typhoid fever lasts only a

few years and that yellow fever vaccine gives life-long protection. If this general section were written more critically, the volume would be more useful.

Five-sixths of the book is devoted to the epidemiology, prevention, and control of some 30 diseases now found in Egypt or potentially important from the viewpoint of international traffic. The latter are cholera, plague, smallpox, and yellow fever, the last never having been present although the country is considered a receptive area for yellow fever.

The cholera epidemic in 1947 is considered at some length. The mechanism of the introduction of this disease is still not proved, but the statement (Page 556) that the water of the Ismailia Canal was no doubt infected through an act of sabotage does little to advance studies of this serious outbreak.

Especially since the opening of the Suez Canal in 1869, Egypt has occupied a key place in international traffic and particularly for those coming from Asia, parts of which still have endemic cholera, plague and smallpox. Therefore, it is fitting that the role of the WHO International Sanitary Regulations in the international control of disease should be fully discussed in a later chapter.

It would be desirable in a subsequent printing to proofread the text more carefully, especially the syllable divisions at the end of lines. The book will prove useful to many readers concerned with the diseases described because of the orderly epidemiological approach to each one. Those wishing to consult original papers of authors mentioned will miss the usual references. There is an index. ROBERT I. HOOD

BOOKS RECEIVED

Listing in this column acknowledges the receipt of books and our appreciation to the senders. Space and the interests of readers will permit review of some, but not all, of the books listed.

ACCEPTED DENTAL REMEDIES 1960. Chicago, Ill.: American Dental Association, 1960. 226 pp. Price, $3.00.

AMERICAN UNIVERSITIES AND FEDERAL RESEARCH. Charles V. Kidd. Cambridge, Mass.: Harvard University Press, 1959. 272 pp. Price, $6.00.

ANNOTATED BIBLIOGRAPYY OF STAPHYLOCOCCAL INFECTIONS. Reprinted from the American Journal of Nursing, Vol. 59, December, 1959. Mary R. Lester. New York, N. Y.: American Journal of Nursing, 1959. 25 pp. Price, $.25.

BIRTH AND DEATH REGISTRATION IN MASSACHUSETTS 1639-1900. Robert Gutman. New York, N. Y.: Milbank Memorial Fund, 1959. 115 pp. Price, $1.00.

CENTRAL NERVOUS SYSTEM AND BEHAVIOR. Transactions of the Second Conference, February 22-25, 1959. Mary A. B. Brazier, Ph.D., Editor. New York, N. Y.: Josiah Macy, Jr. Foundation, 1959. 358 pp. Price, $4.75.

DICTIONARY OF ATOMIC TERMINOLOGY. English-German-French-Italian. Edited by Lore Lettenmeyer. New York, N. Y.: Philosophical Library, 1959. 298 pp. Price, $6.00.

DIGEST OF OFFICIAL ACTIONS 1846-1958. Vol. I. F. J. L. Blasingame. Chicago, Ill.: American Medical Association, 1959. 779 pp. Price, $5.00.

DOCTOR STRAND. Boris Sokoloff. New York, N. Y.: Vantage Press, 1960. 205 pp. Price, $3.50.

EVALUATION OF PROTEIN NUTRITION. A Report of the Food and Nutrition Board. Washington, D. C.: National Academy of Sciences, National Research Council, 1959. 61 pp. Price, $2.00.

FLUORINE AND DENTAL HEALTH—THE PHARMACOLOGY AND TOXICOLOGY OF FLUORINE. Edited by Joseph C. Muhler and Maynard K. Hine. Bloomington, Ind.: Indiana University Press, 1959. 216 pp. Price, $5.00.

FOOD POISONING—FOOD-BORNE INFECTION AND INTOXICATION. Elliot B. Dewberry. London, England: Leonard Hill House, 1959. 411 pp. Price, 45s Net.

GERMAN SECRET WEAPONS OF WORLD WAR 2. Rudolf Lusar. New York, N. Y.: Philosophical Library, 1959. 264 pp. Price, $10.00.

GRADUATE SCHOOL AND THE DECLINE OF LIBERAL EDUCATION. Earl G. McGrath. New York, N. Y.: Teachers College, Columbia University, 1959. 65 pp. Price, $1.50.

GUIDE TO COLLEGES. Gene R. Hawes. New York, N. Y.: Signet Key Book, New American Library of World Literature, 1959. 256 pp. Price, $.75.

HOW YOU CAN STOP SMOKING . . . PERMANENTLY. Ernest Caldwell. Hollywood, Calif.: Wilshire Book Co., 1960. 96 pp. Price, $1.00.

HANDBUCH DER BERUFSKRANKHEITEN 2., NEW BEARBEITETE AUFLAGE. Franz Koelsch. Jena, Germany: Veb Gustav Fischer Verlag, 1959. 1134 pp. Price, 76,-DM.

INVENTORY OF SOCIAL AND ECONOMIC RESEARCH IN HEALTH (8th ed.). New York, N. Y.: Health Information Foundation, 1959. 556 pp. Available upon request.

MEANING OF DEATH. Edited by Herman Feifel. New York, N. Y.: McGraw-Hill, 1959. 351 pp. Price, $6.50.

MEDIEVAL AND RENAISSANCE MEDICINE. Benjamin L. Gordon. New York, N. Y.: Philosophical Library, 1959. 843 pp. Price, $10.00.

OPERATION OF STERILISING AUTOCLAVES—REPORT OF A SYMPOSIUM. Philadelphia, Pa.: Rittenhouse Bookstore, 1959. 45 pp. Price, 7s.6d.

PSYCHOANALYTIC STUDY OF THE CHILD. Vol. XIV. Edited by Ruth S. Eissler, et al. New York, N. Y.: International Universities Press, 1959. 433 pp. Price, $8.50.

PSYCHOLOGY: A STUDY OF A SCIENCE. Vol. 3. Edited by Sigmund Koch. New York, N. Y.: McGraw-Hill, 1959. 837 pp. Price, $12.50.

PUBLIC HEALTH IN BRIDGEPORT:

Vol. I—INTRODUCTION AND MENTAL HEALTH. 75 pp. Price, $1.50.

Vol. II—PUBLIC HEALTH NURSING SERVICES. 53 pp. Price, $1.50.

Vol. III—DENTAL HEALTH: BRIDGEPORT DEPARTMENT OF HEALTH: CHRONIC DISEASE AND REHABILITATION: IN-PATIENT AND OUT-PATIENT GENERAL HOSPITAL CARE FOR THE NEEDY: COMMUNITY HEALTH ORGANIZATION: MAJOR RECOMMENDATIONS: COST AND ECONOMIES OF SURVEY RECOMMENDATIONS. 186 pp. Price, $2.00.

$5.00 for set, plus postage. Bridgeport, Conn.: Community Chest and Council, 1959.

PUBLIC HEALTH—THE REFERENCE SHELF. Vol. 31. No. 6. Edited by Peter Van Avery. New York, N. Y.: H. W. Wilson, 1959. 242 pp. Price, $2.50.

RADIATION COUNTERS AND DETECTORS. C. C. H. Washtell. New York, N. Y.: Philosophical Library, 1959. 115 pp. Price, $7.50.

SMOKING AND HEALTH. Alton Ochsner. New York, N. Y.: Julian Messner, 1959. 108 pp. price, $3.00.

SOURCES OF MORBIDITY DATA—LISTING NUMBER 7, 1959. Clearinghouse on Current Morbidity Statistics Projects, Division of Public Health Methods. Washington, D. C.: Department of Health, Education, and Welfare, 1959. 88 pp.

STRATOSPHERIC RADIOACTIVITY DATA OBTAINED BY BALLOON SAMPLING. U. S. Atomic Energy Commission. Joshua Z. Holland. Washington, D. C.: Office of Technical Services, Department of Commerce, 1959. 128 pp. Price, $1.50.

TABULATING EQUIPMENT AND ARMY MEDICAL STATISTICS. Albert G. Love; Eugene L. Hamilton; and Ida Levin Hellman. Office of the Surgeon General, Department of the Army. Washington, D. C.: Gov. Ptg. Office, 1958. 202 pp.

THEORY OF PLATES AND SHELLS (2nd ed.). Stephen P. Timoshenko and S. Woinowsky-Krieger. New York, N. Y.: McGraw-Hill, 1959. 580 pp. Price, $15.00.

VITAL STATISTICS 1949 TO 1955. New York, N. Y.: City Department of Health, 1959. 249 pp.

A SELECTED PUBLIC HEALTH BIBLIOGRAPHY WITH ANNOTATIONS

Raymond S. Patterson, Ph.D., F.A.P.H.A.

Settling the Score—If you are in any way responsible for the organization, conduct, or the over-all success of a public health gathering you may want to consider the possibility of importing this idea from the (Br.) "Journal of the Association of Public Health Inspectors." An anonymous author of "A Delegate's Diary" gives a breezy and readable account of the entire 1959 annual meeting, commenting — apparently quite frankly — on such matters as which sessions were exciting and which weren't up to snuff, and who made a hit and how, as well as those who struck out while at bat and why. Wholesome medicine for future speakers, it would seem!

ANON. A Delegate's Diary. The Sanitarian (Br.) 68, 2:56 (Nov.), 1959.

Sunshine and Fresh Air—Suburbia has grown three times as fast as the central city and twice as fast as the country as a whole. Statistical presentation of this challenging social and/or public health phenomenon is divided into national and metropolitan regions, so you can see at a glance how your bailiwick's growing pains compare with similar difficulties elsewhere. Pacific regions have, as you probably know, the highest percentages of suburban increase. New England the lowest.

ANON. Rapid Suburban Population Growth. Statist. Bull. Metrop. Life Insur. Co. 40, 9:1 (Oct.), 1959.

From Five Hundred Clinics—Summarized here, for the first time, are the national data on the characteristics of almost four hundred thousand clinic patients — and the sort of services they receive — who attended outpatient psychiatric clinics established through the cooperation of the NIMH and state mental health authorities. More children than adults were seen for diagnosis and short-term treatments, and more males than females.

BAHN, A. K., and NORMAN, V. B. First National Report on Patients of Mental Health Clinics. Pub. Health Rep. 74, 11:943 (Nov.), 1959.

Cigarettes vs Lungs—The Surgeon General's reasoned and eminently reasonable statement about the status of lung cancer will be known by all in the public health field, if not by this official statement then by the play it received in the public press. He reviews here the evidence that points to the clear relationship of heavy cigarette smoking and lung cancer; he pays his respects to the arguments of others who say that there are other cancerogenic factors in our environment; he ends with seven "statements" justified by the studies to date.

BURNEY, L. E. Smoking and Lung Cancer. J.A.M.A. 171, 13:1829 (Nov. 28), 1959.

Another Official Statement—This one is based upon the findings of the PHS Committee on Live Poliovirus Vaccine. It says, in effect, that if progress continues in the research on live virus vaccines, at least one vaccine may be in production within a year or two. In the meantime the Salk vaccine "a potent weapon whose value and effec-

tiveness have been proved" is here for our use and should be used. The bridges still to be crossed before live vaccines may be licensed for production are described.

BURNEY, L. E. Live Poliomyelitis Vaccine Status. Pub. Health Rep. 74, 11:983 (Nov.), 1959.

VD in High School—"The upward trend in (VD) cases begins at 12 years of age among girls and 14 years among boys . . . peak case incidence is 17 years among girls and 20 among boys . . . ." What school nurses did, through group teaching and individual counseling in one city school system, is related in useful detail.

CROMWELL, G. E. The Teenager and Venereal Disease. Am. J. Nursing 59, 12:1738 (Dec.), 1959.

Not By Bread Alone—If you are one who assumes that nutrition, exercise, and rest are the essentials of healthy living then you will find some tough challenges to face in this portrayal of the real needs of man. How much of this inclusive picture you can accept will depend probably upon your experience and insight, but it would be difficult indeed for you to ponder over these twelve "basic needs" and not be influenced by your reading.

DUNN, H. L. What High-Level Wellness Means. Canad. J. Pub. Health 50, 11:447 (Nov.), 1959.

"Smelling of Rats"—A British MOH thinks out loud about the opposition to water fluoridation and ways to combat opponents, employing unhappy American experience as a sort of horrible example. He mulls over what we might have done and what his associates will soon have to be doing. He observes gravely, "it is a common characteristic of the opponents that they are inherently suspicious, given to the imagining of conspiracies, and the smelling of rats."

GRIFFITH, G. W. Observations on the Fluoridation Controversy. Pub. Health 74, 1:27 (Oct.), 1959.

Poisons—Three years' experience in the operation of a poison control center in New York leads to these observations (based upon nearly 24,000 incidents): among infant fatalities lead was the most frequent poisoning agent, followed by aspirin; nearly all reported incidents would have been preventable; a public educational program is an essential.

JACOBZINER, H. Causation, Prevention, and Control of Accidental Poisoning. J.A.M.A. 171, 13:1769 (Nov. 28), 1959.

This Is About Rabbits—Diet with neither cholesterol nor fat in it raised the blood cholesterol level and induced atherosclerosis in full-grown rabbits. The cholesterol level went down when corn oil was added to the diet. There is much to suggest, say the authors, that similar changes might develop in man and that atherosclerosis may thus be a symptom of fatty acid deficiency.

MALMROS, H., and WIGAND, G. Atherosclerosis and Deficiency of Essential Fatty Acids. Lancet 7106:7496 (Nov. 7), 1959.

Pets, Babies, and Hospitals—During a year of study enteropathic E. coli were isolated from many pet cats and dogs. In one hospital admission, it was clear that the baby had been infected with one of these organisms by an apparently healthy pet dog.

MIAN, K. A. Isolation of Enteropathogenic Escherichia coli from Household Pets. J.A.M.A. 171, 14:1957 (Dec. 5), 1959.

Teamwork the Answer—Though this paper does not neglect the over-all school health program (in a substantial suburban setting), its primary concern is with professional teamwork and joint medical facilities essential to effective care of children physically and emotionally handicapped.

MITCHELL, H. H., and PEEPLES, W. J. Newer Concepts of School Health Services. J.A.M.A. 171, 15:2060 (Dec. 12), 1959.

Nursing Statesmanship—After reviewing history, and some of the devious politics that foreshadowed and colored the present-day status of practical nursing, the author looks into the future of this presently and healthfully growing area of patient care. He dares to hope that practical nurses will be more effectively employed than now in both health agencies and institutions. More important, he hopes, they will become more available for post-hospital care in the home.

PORTERFIELD, J. D. The Practical Nurse—Her Place in the Sun. Nursing Outlook 7, 11:656 (Nov.), 1959.

Sniffles Study—From that unique venture, the (Br.) Common Cold Research Units, comes further evidence that "HA" viruses, herein called "parainfluenza" viruses, can cause illnesses resembling the common cold, when the viruses are instilled into the nasal passages of volunteers. The incubation period in the cases was longer than when the illnesses were produced experimentally by ordinary "cold" virus instillations. The authors point out that it has yet to be proved that the effects would have been the same under natural conditions of exposure.

TYRRELL, D. A. J., et al. Inoculation of Human Volunteers with Parainfluenza Viruses Types 1 and 3 (HA 2 and HA 1). Brit. M. J. 5157:909 (Nov. 7), 1959.

Ill and Old—Assembled here are three papers dealing with technics to be used in training personnel to care for the chronically ill and the aged, in nursing homes. They represent three approaches to this training that are now being carried on.

UNDERWOOD, B. Filling Training Needs (and two related papers). Pub. Health Rep. 74, 11:986 (Nov.), 1959.

Air Clearing—Seven papers, though drastically cut, still provide some indication of the temper of a discussion between (Br.) general practitioners and MOH's, concerning the relative roles of the two professions in present-day problems of health and illness. Though the relationship of the two professional groups in Britain is quite dissimilar to their jobs here, there is much in the frank give-and-take discussion that has meaning for us. At any rate, it is always stimulating to eavesdrop on others in their moments of frankness.

WATSON, G. I. The New Epidemiology (and six related papers). Pub. Health 74, 2:49 (Nov.), 1959.

If additional information is desired regarding the articles listed in this bibliography, please communicate directly with the publications in which they appeared; the addresses are furnished for your convenience.

Am. J. Nursing (American Journal of Nursing), 2 Park Avenue, New York 16, N. Y.

Brit. M. J. (British Medical Journal), British Medical Association House, 19 Tavistock Sq., London, W.C.1, England.

Canad. J. Pub. Health (Canadian Journal of Public Health), 150 College St., Toronto 5, Canada.

J.A.M.A. (Journal of the American Medical Association), 535 N. Dearborn St., Chicago, Ill.

Lancet, 7 Adams St., Adelphi, London, W.C.2, England.

Nursing Outlook, American Journal of Nursing Company, 10 Columbus Circle, New York, N. Y.

Pub. Health (Public Health), Society of Medical Officers of Health, Tavistock House, Tavistock Sq., London, W.C.1, England.

Pub. Health Rep. (Public Health Reports), Gov. Ptg. Office, Washington, D. C.

Sanitarian (National Association of Sanitarians), University of Denver, UPC, Department of Sanitary Science, Denver 10, Colo.

Statist. Bull. Metrop. Life Insur. Co. (Statistical Bulletin of the Metropolitan Life Insurance Company), One Madison Avenue, New York 10, N. Y.

NEWS FROM THE FIELD

WHO News

Analysis for Radionuclides

"Methods of Radiochemical Analysis," a report of the first meeting of a joint WHO/FAO Expert Committee covers methods for determining radioactive materials in certain biological matter, foods, and the human body and discusses the sources and evaluation of contamination. The significance to both public health and agriculture of radionuclides plus the similarity of laboratory methods used in both areas, in determining the presence of such contaminants, prompted this cooperative effort. Because of the breadth of their combined fields, however, the committee gave "primary attention, at this first meeting, to the more immediate health aspects and only preliminary consideration to the agricultural problems."

WHO Technical Report Series No. 173. Columbia University Press, International Documents Service, 2960 Broadway, New York 27, N. Y., $1.

PASB: Professional Education

Under the auspices of the WHO/PASB, the directors of schools of public health of Latin America held a conference in Mexico, November 2-6, 1959. In addition to the directors of seven of the nine schools in Latin America, one or two faculty members attended from each school, and one or more persons from the national ministries of health in the several countries also participated in the discussions; 35 were present including representatives from the United States.

The opening plenary session was addressed by José Alvarez Amezquita, M.D., the minister of health and welfare of Mexico and by Abraham Horwitz, M.D., M.P.H., director, Pan American Sanitary Bureau. Group sessions were held in which three main themes were discussed: (a) the objectives of a school of public health, (b) curriculum content and teaching methods, and (c) standards of teaching, research, community service, and administration of the institution. Results of the group discussions were then presented to the plenary session and a final report drawn up which reflects the views of the conference as a whole. This is available at the Pan American Sanitary Bureau, 1501 New Hampshire Avenue, N.W., Washington 6, D. C; in Spanish and English.

Among the conclusions: (1) The teaching staff should develop in the students such knowledge as will permit them to plan, execute, and evaluate health programs, preferably in a team. This should be done through the study of principles, theories, methods, and technics relating to promotion of health and prevention of disease including rehabilitation and the recovery of health. (2) The students should have experiences that will demonstrate the application of principles and methods learned during their studies, to the solution of most frequently encountered problems. Members of the school of public health should engage in research in order to advance the frontiers of knowledge and in order to acquaint the students with advanced problems and those that have not yet been solved. (3) The school should act as a repository of knowledge in the field of health, so that the community and its agencies may call upon the school of public health for expert knowledge in this field. (4) The students of the school of public health should have basic knowledge in the field of health, be dedicated to public service, and be able to work effectively in a team. (5) The school should offer public health administration, epidemi-

ology, biostatistics, and environmental sanitation as basic essential courses. In addition, the social sciences, nutrition, health education, maternal and child health, microbiology, and parasitology should be considered important subjects presented either separately or in conjunction with the above. (6) A school of public health is a costly enterprise and should be supported from public funds insofar as possible. (7) Each country and institution should develop standards for its school of public health.

At the final plenary session, the participants expressed the hope that regular meetings of persons in Latin America engaged in the teaching of public health might be held.

Pedro Daniel Martinez, M.D., director, School of Public Health, Mexico City, was president of the conference. James L. Troupin, M.D., director of professional education, APHA, and Wilson G. Smillie, M.D., Dr.P.H., consultant to the APHA Committee on Professional Education, attended the conference as consultants to PASB.

Graphic Picture of Africa's Health

The November-December "World Health" is a special issue on "Africa: The Era of the Doctor and the Engineer." This represents the first of a series of special issues describing the health problems in different parts of the world. Profusely illustrated with photographs, the story of the transition "From the Pastoral Era to the Age of Engineers" in this "continental vastness" is dramatically told.

In this section devoted specifically to "Africa's Health" there are such subtitles as Children First; They Track Down an Evil Genius, Gambiae; Knowledge Leads to Health; The Fight of the Sleep Brigades; Mental Illness and Tuberculosis; and My Enemy Number One Is the Witch Doctor.

In introducting the issue, Dr. F. J. C. Cambournac says: "The new feature in Africa is that the Africans themselves are taking their own destiny in hand: traditional ways of life are being replaced by a civilization in which modern techniques play a predominant role. The most spectacular aspect of the evolution . . . is the appearance of vast work sites from which the industrial structure of the continent is emerging."

This bimonthly WHO magazine is a window on health around the world. Requests to be put on the mailing list should be made to WHO Regional Office for the Americas, Pan American Sanitary Bureau, 1501 New Hampshire Avenue, N.W., Washington 6, D. C.

Nuclear Engineers to Meet

The 1960 Nuclear Congress will be held in New York City's Coliseum, April 4-7. With 35 per cent of the nation's 600,000 engineers living and working within 300 miles of New York City, the congress is expected to draw its largest attendance to date. The 6th Nuclear Engineering and Science Conference, the 8th NICB Atomic Energy in Industry Conference, and the 6th International Atomic Exposition will be components of the congress. The theme of the meeting is "What Will the Future Development of Nuclear Energy Demand from Engineers?" The bill of attractions includes discussions of public health problems, federal-state regulations, and nuclear propelled aircraft and space vehicles.

The session on public health regulation of nuclear energy is being sponsored by the American Public Health Association. Merrill Eisenbud, professor of industrial medicine, New York University, who will lead this program, developed it in consultation with Lester A. Barrer, Ph.D., radiation physicist, New Jersey State Department of Health. The congress is open to all interested persons. Registration fee $15 ($1 for bonafide students). Dr. Clarke Williams,

chairman of the Nuclear Engineering Department of the Brookhaven National Laboratory, Upton, N. Y., is congress chairman. Francis B. Elder, engineering associate, APHA, represents the Association on the program committee which is headed by E. B. Gunyou.

Board Examinations: Nutrition

The American Board of Nutrition will hold the next examinations for certification as a specialist in human nutrition during the week of April 11-15, 1960, in Chicago, Ill. Candidates who wish to be considered for these examinations should forward applications to the secretary's office not later than March 1. Forms from the secretary, Robert E. Shank, M.D., Department of Preventive Medicine, Washington University School of Medicine, Euclid Avenue and Kingshighway, St. Louis, Mo.

Stepping Up Polio Immunization

An early spring campaign to support local vaccination drives was sparked at a recent Washington meeting called by the Public Health Service. Here representatives of health and medical organizations reviewed the 1959 polio experience and mapped plans for promoting further vaccination.

It was reported that 30 per cent of the population under 40 have had no vaccine. Children under five years of age without vaccination number 4,500,000; this group accounted for 43 per cent of paralytic cases in 1959. In the three cities with major and most of the 14 with moderate outbreaks, cases were concentrated among unvaccinated persons living in crowded and poorer economic areas. Programs to bring these groups under immunization must be developed with the close cooperation of the public health and medical professions and the citizenry.

The spring advertising campaign to promote more widespread vaccination will be conducted by the Advertising Council and sponsored jointly by the Public Health Service, the National Foundation, and the American Medical Association.

The American Public Health Association was represented by Murray Grant, M.D., health officer of Prince George's County, Md. Another local health officer, James F. Speers, M.D., of Des Moines-Polk County, Iowa, was also present as were three state health officers, Delaware's Floyd I. Hudson, M.D., Indiana's Andrew C. Offutt, M.D., and Mississippi's A. L. Gray, M.D. The latter three represented the Association of State and Territorial Health Officers.

ASTHO and Surgeon General Meet

The annual meeting of the Association of State and Territorial Health Officers with the Surgeon General passed a number of relating resolutions. Among these, one introduced by the Hospital and Mental Health Committee, urged the state and territorial health officer to encourage the development of refresher courses and other educational activities for the orientation of health officers and practitioners in the understanding and use of mental health resources.

On the recommendation of the Committee on Long-Term Illness and Aging the association's members were urged to develop services to deal with problems of disability, to seek state and federal funds for this purpose, and to work toward cooperative relations with vocational rehabilitation and related agencies.

Another resolution was introduced by the special Health and Medical Services Committee. It urged that local health departments orient newly licensed practitioners to health activities of communities and the relationship of the practitioner to these services.

Herman E. Hilleboe, M.D., New York

State health commissioner, was given ASTHO's McCormack Award "for his long and distinguished service in public health." He was also presented with a silver Paul Revere bowl to honor his outstanding leadership as president in 1958.

D. G. Gill, M.D., health officer of Alabama was the retiring president. New officers are:

President—Wilson T. Sowder, M.D., M.P.H., Jacksonville, Fla.

Vice-President—Mack I. Shanholtz, M.D., M.P.H., Richmond, Va.

Secretary-Treasurer—Andrew C. Offutt, M.D., Indianapolis, Ind.

A New County and a New Try

St. Louis County is the second in Minnesota to organize a county board of health. The new board will have jurisdiction over the entire county, except two cities, Duluth and Virginia, and thus serve nearly 100,000 persons. The health officer of Duluth, Mario Fischer, M.D., has been appointed also county health officer. The county health law of the state, passed in 1949, authorizes city boards of health to be incorporated into a county board if the majority of voters so approve.

In Pennsylvania, Northampton County, with a population of nearly 200,000, has prepared for another referendum on establishing a county health department at approaching elections, a similar referendum having failed some years ago. The "Physician and Public Health" of the State Medical Society reports a number of advantageous situations such as the solid support of the county medical society and its hard-working woman's auxiliary; participation of more than 100 lay citizens; support by both Bethlehem and Easton newspapers; strong public endorsement by Bethlehem's mayor; extensive endorsement by county organizations; and a speakers' bureau with expanded coverage. (Editor's note: on going to press, the Journal received information that the Northampton referendum was defeated; 34,000 voters expressed no opinion at the polls. Of the 35,200 votes cast, 46 per cent were for and 54 per cent were against. By contrast, the 1953 referendum was defeated by a 2:1 ratio. The urban vote was more favorable than that in rural areas, where in 1953 "the issue found sledding the roughest." "The Physician and Public Health," notes: "Intensive education on subjects of local health interest, through individual contacts, rather than through mass media apparently is the method necessary to reach people in the outlying municipalities. This procedure requires lots of time and patience.")

Tightening Up NIH Grant Standards

The Public Health Service has given new guidelines to its various advisory councils that pass on applications for National Institutes of Health research grants. Criteria require that (1) projects must be of such high priority and promise that postponement of financial aid would tend to delay medical progress; (2) support must not harm present clinical and teaching services by diverting manpower into research; (3) support must not be a mere substitution of federal for nonfederal funds. Study sections of NIH will report to the advisory councils those projects that, although recommended, are low in priority or lack the approval of at least two members of the section; additional data is to be requested from grantees to insure compliance with the criteria.

Quarterly on Radiation in Medicine

The Society of Nuclear Medicine published the first issue of its official quarterly, "The Journal of Nuclear Medicine," in January. "The editorial content of the Journal will be directed

towards those members of the medical and allied professions who are interested in the diagnostic and therapeutic application of radioisotopes and in human radiobiology."

George E. Thoma, M.D., St. Louis, Mo.; is editor. Associate editors are: Titus C. Evans, Ph.D., Iowa City, Iowa; Niel Wald, M.D., Pittsburgh, Pa.; and Eugene L. Saenger, M.D., Cincinnati, Ohio.

Manuscripts and books for review should be directed to Dr. Thoma, at Southwest Medical Center, 3915 Watson Road, St. Louis 9, Mo. Subscription requests should be mailed to the publisher, Samuel N. Turiel & Associates, Inc., 430 N. Michigan Avenue, Chicago 11, Ill.; $10 per year.

Air Pollution Research Census

Air pollution research projects conducted in 1959 are being inventoried by the Task Group on Research in Air Pollution of the American Society of Mechanical Engineers. Questionnaires were sent out in December, 1959, to those organizations known to have carried on research during the year; any person or group responsible for research in air pollution conducted during 1959, who has not received a questionnaire, is asked to communicate with Austin Heller, chairman, Task Group-Air Pollution Research, ASME, 29 West 39th Street, New York 18, N. Y. The regular questionnaire will then be sent.

Mental Health Curricula Conference

The National Conference on the Teaching of Mental Health in Schools of Public Health (Arden House, Harriman, N. Y., December 6-11, 1959) was made possible through a grant from the National Institutes of Health. Six preparatory committee reports provided the basis for the discussions on the following subjects: (1) Historical Background and Working Concepts of Mental Health and Public Health; (2) The Schools of Public Health and Their Students; (3) Professional Roles and Responsibilities of Public Health Personnel in Relation to Community Mental Health; (4) Curriculum Content in Mental Health; (5) Teaching Methods Related to Mental Health Content; (6) Training of Mental Health Specialists in Schools of Public Health.

The 70 persons attending the conference included representatives from public health, psychiatry, social sciences, psychology, and other related fields. A core curriculum, including concepts of personality and personality development, organization and administration of mental hygiene programs, skills in interviewing and in group process administration, was recommended for every public health student. Elective courses might deal with mental disorders and the administration of community psychiatric facilities. Advanced courses for specialists were suggested for schools of public health in collaboration with other types of institutions in the university and in the community.

Proceedings of the conference are expected to be published. Ray E. Trussell, M.D., chairman, Columbia University, School of Public Health and Administrative Medicine, was general chairman of the conference.

Practical Nurse for Rural Area

For ten months of 1958 the Minnesota Department of Health placed a practical nurse in rural Steele County (population about 25,000) to work with the county public health nurse. This was a study project conducted with the cooperation of the county commissioners and the nursing committee of the county Public Health Nursing Service. (The county has no organized health department.) The study was supervised by the state's director of public health nursing, Alberta

B. Wilson, R.N., and Robert M. White, Ph.D., research director of the hospital services study of the State Health Department.

During this experiment there was a significant increase in the number of individuals admitted to the home nursing care service. There was a 472 per cent increase in therapeutic nursing visits, an over-all 199 per cent increase in all types of visits; average monthly number of visits per nurse increased and the average cost per visit dropped 13 per cent.

Among the conclusions of this study are that local physicians be involved in developing and planning extension of home nursing care service, that both the practical and the public health nurse have orientation and special instruction in rehabilitative nursing technics, that physical therapy consultation be available, and that a continuous public education program to interpret the services to the community be carried on.

This study is reviewed in the October, 1959, issue of "Minnesota's Health," which might be shared with others. Also possibly still available is a March, 1959, Time Study of Generalized Public Health Nursing Activities in Rural Minnesota made under Miss Wilson's supervision. Section of Public Health Nursing, Division of Local Health Administration, Minnesota Department of Health, Minneapolis 14, Minn.

Health and Air Pollution Course

A postgraduate course on "Effects of Air Pollution and Environment on Health" will be presented at the University of Wisconsin, May 19-20, 1960. Under the direction of Seymour B. Crepea, M.D., associate professor of medicine and director of the Allergy Clinic at University Hospitals, the course will provide for clinical discussions on various phases of air pollution and its effect on health. Industrial pollution, air-borne infections, and problems of rural air pollution will be considered. The USPHS, Veterans Administration, and several medical schools in addition to the University of Wisconsin's will supply the faculty.

Registration information from Robert C. Parkin, M.D., coordinator of Graduate Medical Education, University of Wisconsin Medical School, 418 N. Randall Avenue, Madison 6, Wis.

New Health Journal to Make Debut

The Leo Potishman Foundation at Texas Christian University is to publish a quarterly, the "Journal of Health and Human Behavior," beginning on March 1, 1960. Directed to "physicians, nurses, medical schools, clinics, hospitals, public health departments, sociologists, psychologists, anthropologists, psychiatrists, and interested laymen, . . . it will emphasize ecological, demographic, socioepidemiological, socioetiological, community, and family aspects of health and disease."

The new publication will accept papers "in its areas of interest on a merit basis, regardless of the specialization of the writer." A large group of associate editors includes Odin W. Anderson, Ph.D., Samuel W. Bloom, Ph.D., Walter E. Boek, Ph.D., Harold W. Demone, Jr., Ph.D., Saxon Graham, Ph.D., Bernard Kutner, Ph.D., Stanley H. King, Ph.D., George G. Reader, M.D., Leo G. Reeder, Ph.D., Leo W. Simmons, Ph.D., Ozzie G. Simmons, Ph.D., Robert Straus, Ph.D., Clark Tibbits, D.Sc., Edward Wellin, Ph.D., and Donald Young, Ph.D. An Advisory Board of Editors includes John E. Gordon, M.D., Abraham Lilienfeld, M.D., Edmund D. Pellegrino, M.D., John D. Porterfield, M.D., Milton I. Roemer, M.D., and George Rosen, M.D., Ph.D.

The editor and the co-editor are Austin L. Porterfield, Ph.D., and E. Gartley Jaco, Ph.D. Texas Christian University, Fort Worth, Tex. Subscrip-

tion rate $6; special rate of $4 to behavioral scientists in the field of health and medicine.

A Geriatric Note

The Federal Aviation Agency has established 60 as the mandatory retirement age for airline pilots, effective March 15, 1960. For the present the regulations for pilots on aircraft engaged in carrier operations do not apply to pilots of small planes who operate under the rules governing irregular air carrier operations.

California Mental Health Act

The two-year growth in mental health activities in the state following the passage of the Short-Doyle Act, is reviewed in "California's Health" of October 15, 1959. Twelve counties or cities with 69 per cent of the state's population had begun programs for which state reimbursement of about one-third is provided. During the first year of operation, when only 29 per cent of the state's population was involved, nearly four million dollars was budgeted for the program.

The law is flexible as to administrative responsibility for the program. The director may be the local health officer, a county hospital medical superintendent, or a psychiatrist-director. In the 12 communities with approved programs, seven are directed by the local health officer, who in two instances is also county hospital superintendent. The hospital superintendent directs three programs, a psychiatrist-director, two.

The law allows flexibility also as to type of program. Some focus on public health-oriented prevention and early case-finding, others on clinical services for the psychiatrically disabled; some provide direct services, some only indirect, such as education and consultation.

Edwin Rudin, M.D., is chief of state-local mental health services in the state's Department of Mental Hygiene. His summary of current experience should be useful to other areas setting up mental health programs.

AMA Plans Medical Scholarships

The House of Delegates of the American Medical Association, meeting recently in Dallas, approved a special committee to study various aspects of medical education and particularly to develop a scholarship program for medical students. The House recommended that a fund, backed by AMA as a primary sponsor, be established to aid deserving students to enter the field of medicine. The new committee will also be asked to determine the maximum to which medical schools could expand their student bodies and what universities might be able to support new two-year or four-year medical schools; and to investigate ways and means of financing the expansion or establishment of schools, of obtaining competent faculties, and of relaxing rigid geographic restrictions on student admissions.

Among other resolutions medical schools are urged to include in their curricula a course on the social, political, and economic aspects of medicine. The delegates strongly recommended that state and local medical societies, as well as individual physicians, implement the AMA program for recruitment of high-grade medical students.

Cooperation in Adult Center

An Adult Health and Recreation Center, "designed to help older adults understand their own aging as a natural process and to promote their physical and mental well-being through health, recreation, and counseling services," has completed its first year in Philadelphia. It is operated jointly by the City De

partments of Health and Recreation and the state's Department of Public Welfare, and is said to be "the only one of its kind in the entire country" because of certain "unique features including medical consultation."

During the first year of operation the center provided more than 550 interviews for applicants, 190 medical consultations, 35 job placement conferences, and 25 psychiatric consultations.

Inquiries about the activities of the center are accepted by the Philadelphia Department of Public Health, Norman R. Ingraham, M.D., acting health commissioner, 519 City Hall Annex, Philadelphia 7, Pa.

Public Medical Care in New Jersey

"The Report and Recommendations of the New Jersey Commission to Study the Administration of Public Medical Care" was issued in mid-1959 after 18 months of study. The commission and its study were inspired by problems outlined by the Medical Care Committee of the New Jersey Welfare Council. Chief among these problems is "the diversity and complexity of the many methods currently utilized in providing medical care for assistance recipients and for other persons and families who are unable to meet the cost of medical care out of their own income and resources."

Among the recommendations made by the commission are for the establishment of a Medical Care Unit in the Division of Welfare of the Department of Institutions and Agencies with special attention to the ability of the personnel staffing the unit. Replacing the divided responsibility currently existing, the commission would have medical care of all assistance recipients and the medically needy administered by county boards of welfare adequately staffed; home care units established in the county boards; the Board of Control define medical indigency so that it applies to all public assistance agencies; hospital care for medically indigent paid for on a per unit basis instead of the "present complex system of appropriations and expenditures"; and "a comprehensive program to include the gamut of medical, hospital, and allied services any or all of which may be necessary to care for the needs of the recipients."

A series of statistical tables indicate hitherto municipal appropriations and welfare expenditures of nearly 13 million dollars related to hospital care for public assistance and the medically indigent for one year. Of the annual per capita cost of $2.12 for hospital care for this group, the county provided close to 68 per cent, the state 32 per cent, and the federal government less than one per cent. Of over 60,000 hospital admissions more than one-half were of the medically indigent; of over 700,000 hospital days nearly one-half were in this category, all others being related to general and categorical assistance patients.

The commission, under the chairmanship of Mrs. Asher Yaguda, was made up of five citizens appointed by the governor, three senators appointed by the president of the senate, and three assemblymen appointed by the speaker. The citizen membership included a practicing physician, a representative each of a public welfare agency, a voluntary social agency, and the New Jersey Hospital Association. Consultants to the commission were appointed by the State Department of Health, as well as by the Departments of Institutions and Agencies, Conservation and Economic Development, Labor and Industry, and Education. The consultant of the Health Department was its assistant commissioner, William J. Dougherty, M.D.; Virginia V. Vahey, former medical social consultant, Massachusetts Department of Public Welfare, was the project director.

The report is available from the Commission's offices, Room 114, State Office Bldg., Trenton, N. J.

Tennessee's Radiological Service

A Radiological Health Service has been organized in the Industrial Hygiene Service of the Tennessee Department of Public Health, based on the Radiological Health Service Act of 1959. Its responsibility is to collect basic information on all sources of ionizing radiation in the state, to determine potential hazard, and to establish inspection priority. There will then be consultation on registered hazards to help users or owners conform to recognized practices in radiation protection.

The act charges the state health commissioner with the adoption of "rules and regulations pertaining to the manufacture, use, receipt, possession, storage, and disposal of radiation sources." R. H. Hutcheson, M.D., is the health commissioner; chief of the new service is J. A. Bill Graham, M.S.Sc.

Food Inspection a Health Service

The 1959 session of the South Dakota Legislature voted to transfer responsibility for inspection of public eating establishments and lodging facilities from the State Department of Agriculture to the Department of Health. To meet this new responsibility the latter employed one additional sanitarian for each of the five state health districts. The law requires inspection of an establishment every six months.

There are an estimated 3,000 establishments to be inspected under this program. In addition, by mutual agreement, the Health Department has also accepted from the Agriculture Department the responsibility for inspecting grocery stores, slaughter houses, bakeries, food manufacturing plants and warehouses, locker plants, and pop bottling plants. It is expected that organized local health departments will increasingly assume responsibility for the inspection program in their areas.

Canadian Public Health Association

The "Jubilee Number" (September, 1959) of the Canadian Journal of Public Health reports the conference marking the 50th anniversary of the founding of the Canadian society (A.J.P.H. May, 1959, page 675, Editorial). Convening June 1-3 in Montreal (where the first annual meeting was held) members took part in three general sessions, two luncheon sessions, and 19 meetings of the ten sections of CPHA, many of which met jointly. The program in general reflected many of the changes in public health in Canada since 1910.

At the first general session, "Dr. Edward Playter—A Vision Fulfilled," a paper by R. D. Defries, M.D., D.P.H., consultant, Connaught Medical Research Laboratories, Toronto, and editor of the association's Journal, focused the convention's attention on the past, and the early strivings for the founding of a professional society for Canadian public health workers. Dr. Playter (who did not live to see the vision fulfilled), a strong and active supporter of this idea, became an early member of the American Public Health Association. "Largely through his efforts, the (APHA) 1886 (annual) meeting was held in Toronto," a tactic for stimulating his fellow workers to found a Canadian society. In his talk, Dr. Defries recounted the many attempts of early public health leaders to found "sanitary" or "public health associations," "institutes," and official boards and departments of health on local, provincial, and dominion levels. His account of a professional society's birth and heritage is filled with implicit lessons in courage and dedication for the public health worker of today.

At the same session, Jules Gilbert, M.D., D.P.H., president, CPHA, addressed himself to the theme of the present and future. His talk was basically a clarion call for more and better measures to improve Canadian public health.

He cited the need by pointing realistically to certain deficiencies in Canadian mortality data, professional training programs, research activities, provision of preventive services and "in some instances, legislation."

The theme of the present and future was carried further by K. C. Charron, M.D., director of health services, Department of National Health and Welfare, Ottawa, in his paper "The Association—Today and Tomorrow." After reviewing present-day organization, membership, and activities of the CPHA, Dr. Charron discussed the need for provincial public health associations to play a more important role in CPHA, and reviewed trends in professional relations and in the development of special sections in the association. CPHA should lead in coordinating "professional and voluntary health efforts," in providing "consultative and public health survey services," in services to provincial associations, and in publishing more written aids to public health workers. This paper and the other two cited above are printed in full in the Jubilee Number of the Canadian Journal of Public Health.

At the second general session the Association heard George Rosen, M.D., Ph.D., editor, American Journal of Public Health, speak about "Reflections on Education for Prevention." Modern health education is as much a complex social product as the people and agencies it is intended to affect. "It cannot be seen in the simplistic terms of 'human engineering' . . . or any of the slogans that achieve fleeting prominence and vanish into limbo." The practice of education for prevention "has some of the aspects of an art. There are no ready-made formulae for (it)." Dr. Rosen cited several of the principles which should guide the health educator as "an agent of social change" and urged the inclusion of social sciences in the training of all health workers.

Innovations at the annual meeting were breakfast meetings for graduates of the Schools of Hygiene of the Universities of Toronto and Montreal.

At a special meeting on the campus of the University of Montreal, the Rector, Monsignor I. H. Lussier, conferred an honorary doctorate of public health on R. D. Defries, M.D.

CPHA president for 1959-1960 is J. S. Robertson, M.D., D.P.H., Department of Public Health, Halifax.

F. B. Roth, M.D., deputy minister of health, Saskatchewan (Fellow, and vice-president 1958-1959, APHA) is president-elect.

At the jubilee dinner, honorary life membership in the CPHA was awarded to J. T. Phair, M.D., D.P.H., former deputy minister of health, Ontario, and to J. A. Baudouin, M.D., D.P.H., Montreal, retired, former director, Department of Public Health and Preventive Medicine, Faculty of Medicine, University of Montreal. Both have been former presidents of the CPHA.

PERSONALS

MICHAEL C. ARRA, D.D.S.,† former dental coordinator for Cook County, Ill., is now director, Division of Dental Health, Wisconsin State Health Department.

FRANK BANE, former executive director, The Council of State Governments, has been named coordinator of conference planning for the Golden Anniversary White House and 1960 Conference on Children and Youth.

LOUIS H. BAUER, M.D., has retired as chairman, United Medical Service (Blue Shield) New York, to be succeeded by CARL R. ACKERMAN, M.D., a vice-president of the service plan and president, Bronx County Medical Society.

FREDERICK J. BRADY, M.D.,† former chief program officer, Bureau of State Services, PHS, is now assistant director, Office of Public Health, International Cooperation Administration, Washington, D. C., succeeding CHARLES L. WILLIAMS, JR., M.D., now chief of ICA's Health Division, Lima, Peru.

TRAVIS P. BURROUGHS, M.D., M.P.H.,* medical director, Bureau of Employees Compensation, Department of Labor, PHS, San Francisco, Calif., has retired.

* Fellow.
† Member.

GALE E. COONS, M.P.H.,† former health education consultant, Indiana State Board of Health, is now chief, Education and Information Section, Division of Dental Public Health, PHS, Washington, D. C.

RICHARD H. DAGGY, Ph.D., Dr.P.H.,* formerly assistant medical director (preventive medicine) is now medical director, Arabian American Oil Company, Dhahran, Saudi Arabia.

DONALD J. DEAN, D.V.M.,† assistant director, Division of Laboratories and Research, has been on a two-month leave of absence from the New York State Health Department as laboratory consultant to the Pan-American Sanitary Bureau of WHO in Caracas, Venezuela.

PAUL M. DENSEN, D.Sc.,* former director, Division of Research and Statistics, Health Insurance Plan of Greater New York, has been named deputy commissioner in charge of planning and research, New York City Department of Health. He succeeds GEORGE JAMES, M.D., who is now first deputy commissioner.

MARJORIE A. EMIDY, M.P.H., has been appointed nutritionist, Maternal and Child Health Section, Wisconsin State Health Department.

HAROLD M. ERICKSON, M.D., M.P.H.,* Oregon state health officer, has resigned to become deputy director, California State Department of Health, succeeding the late FREDERIC M. KRIETE, M.D.

FREDERICK FEATHERSTONE, M.D., is on loan from the Public Health Service as medical consultant, Preventable Diseases Section, Wisconsin State Health Department.

LYMAN S. FORD has been named to succeed RALPH H. BLANCHARD, retiring (June 30, 1960) executive director, United Community Funds and Councils of America.

ABRAHAM GELPERIN, M.D., Dr.P.H.,* former health officer for Kansas City (Mo.), is now administrator of the Neurological Hospital in the same city. He will also direct the hospital's research and training programs.

ROBERT E. GROSS, M.D., received the 1959 Albert Lasker Award for distinguished achievement in cardiovascular research of the American Heart Association. Dr. Gross, surgeon-in-chief, Children's Hospital, Boston, and Ladd professor of children's surgery, Harvard Medical School, was cited for the successful ligation of a "patent ductus arteriosus" so that "surgery upon the heart and great vessels was at last removed from the realm of experimental trial and placed upon a firm clinical basis."

JAMES T. HARRISON, M.D., M.P.H., health officer, Sonoma County (Calif.) Public Health Department, has resigned to join the International Cooperation Administration as public health medical consultant to the government of Honduras.

HAZEL M. HAUCK, Ph.D.,* professor of food and nutrition, College of Home Economics and Graduate School of Nutrition, Cornell University, is on one year's sabbatic leave and will serve as consultant and field worker in a demonstration project, village of Awo Omamma, Nigeria.

HELEN M. HILLE,† former dietary consultant, Vermont Department of Health, is now institutional nutrition consultant, Children's Bureau, Washington, D. C.

HAROLD E. HILLMER, former sanitarian, Fond du Lac Health Department, is now public health sanitarian, Wisconsin State Health Department, District 5 in Wisconsin Rapids.

JACK E. JORDON, former staff assistant to the Pennsylvania Industrial Development Authority, has been appointed executive assistant to Pennsylvania secretary of health, CHARLES L. WILBAR, JR., M.D.

JOHN A. KAUFMANN, M.P.H.,† has been assigned by the Division of Radiological Health, PHS, to the Division of Sanitary Engineering, South Dakota State Health Department, as radiological health officer.

E. K. MUSSON, M.D., M.P.H.,* formerly health officer, Jackson, Mich., is now health officer, District 2, Division of Health of Missouri, Macon.

PHILLIP C. NEWMAN, formerly milk sanitarian with the Central Wisconsin Milk Control Council, is now public health sanitarian, Wisconsin State Health Department, assigned to District 2 in Elkhorn.

MARY ELLEN PATNO, Ph.D.,* former assistant professor of biostatistics, University of Pittsburgh Graduate School of Public Health, has been appointed associate professor of public health statistics, University of Michigan School of Public Health.

ANTHONY MONCK-MASON PAYNE, M.D., presently chief medical officer for endemo-epidemic diseases, WHO in Geneva, will become the Anna M. R. Lauder professor of public health and chairman of the new Department of Epidemiology and Public Health, Yale School of Medicine, July 1, succeeding professor IRA V. HISCOCK, Sc.D., retiring chairman of public health and Lauder professor. Dr. Payne is English.

* Fellow.
† Member.

RICHARD F. POSTON, former regional program director, Division of Water Supply and Pollution Control, San Francisco Regional Office, PHS, is now public health service consultant to the U. S. Study Commission, Southeast River Basins, Atlanta, Ga.

REGINALD ROBINSON, Ph.D., research sociologist, formerly executive director, Massachusetts Committee on Children and Youth, has been appointed director, Task Force on Community Resources, Joint Commission on Mental Illness and Health. In this capacity, Dr. Robinson also has a staff appointment in the Massachusetts Department of Public Health.

C. RUFUS ROREM, Ph.D.,* former executive director, Hospital Council of Philadelphia, is now executive director, Hospital Planning Association of Allegheny County, Pittsburgh, Pa.

AARON SAVAGE, M.S.W., social worker in mental health, is now on the staff of the Wisconsin State Board of Health, assigned to District 6 in Green Bay.

GEORGE S. STEVENSON, M.D., D.Sc.,† former medical director, National Committee for Mental Hygiene and advisor on the planning and organization of mental health services here and abroad, National Association for Mental Health, has retired. He continues as psychiatric consultant to the U. S. Public Health Service and the Veterans Administration.

JAMES E. STUART,† former executive vice-president, has succeeded BASIL C. MACLEAN, M.D., as president, The Blue Cross Association. Dr. MacLean will continue as consultant to the association.

JAMES G. TOWNSEND, M.D.,* a medical director with the PHS, has retired.

DAVID VAN DER SLICE, M.D., M.P.H.,* former medical officer, Health and Sanitation Division, U. S. Operations Mission to Peru, is now chief, Health and Sanitation Division, U. S. Operations Mission to Panama.

V. A. VAN VOLKENBURGH, M.D., Dr.P.H.,* assistant commissioner for local health services, New York State Health Department, has retired after a quarter of a century with the department.

EUGENE WEISBERG, Ph.D.,† former assistant research professor of sanitary science, Graduate School of Public Health, University of Pittsburgh, is now director of sanitary engineering, Pantech Engineers, Pittsburgh, Pa.

JAMES G. WRIGHT has been appointed a public health sanitarian, Wisconsin State Health Department, assigned to District 4 in Sparta.

* Fellow.
† Member.

DEATHS

DANIEL S. BAUGHMAN, M.D.,† superintendent, Lake County Board of Health and director, South Dakota Tuberculosis and Health Association, Madison, S. C., on September 12 (Health Officers Section).

JOSEPH E. BISHOP, C.E.,† director, engineering services, Boy Scouts of America, New Brunswick, N. J. (Engineering Section).

ROLAND R. CROSS, M.D., director of the Illinois Department of Public Health on November 28, 1959 (Health Officers Section).

GEORGE A. W. CURRIE, M.D.,* superintendent, The Hospital for Sick Children, Toronto, Canada, on July 15, 1959 (Medical Care Section).

THOMAS FANSLER,* director, Home Safety Division, National Safety Council, Chicago, Ill., in August, 1959 (Public Health Education Section).

ESTHER M. FINLEY, R.N., M.A.,* director of the Visiting Nursing Association, Buffalo, N. Y., on November 18, 1959 (Public Health Nursing Section).

B. L. FRANK, M.D.,† with the American Medical Association on December 2, 1959 (Unaffiliated).

RANSOM J. JONES, M.D., M.P.H.,* health officer, Lenoir & Jones Counties District, State Board of Health, Kinston, N. C., on August 21, 1959 (Health Officers Section).

CLARA C. PLICHTA, M.A.,† senior supervisor, pediatric nursing, Baltimore (Md.) Health Department on November 4, 1959 (Public Health Nursing Section).

WILMER H. SCHULZE, Phar.D.,* director, sanitary section, Baltimore (Md.) Health Department on May 17, 1959 (Engineering and Sanitation Section).

WINFIELD K. SHARP, JR., M.D.,† director, Division of Indigent Hospitalization Service, Tennessee State Department of Health (Nashville). (Health Officers Section).

WILLIAM A. STARIN, Ph.D.,* retired, Department of Bacteriology, Ohio State University, Columbus, Ohio, on April 6, 1959 (Laboratory Section).

FREDERICK D. STRICKER, M.D., retired state health officer, Portland, Oregon.

CONFERENCES AND DATES

American Public Health Association, Eighty-Eighth Annual Meeting, San Francisco, Calif. October 31–November 4.

Eighty-Ninth Annual Meeting, Detroit, Mich. November 13–17, 1961.

State and Regional Public Health Meetings—February, March, and April:

Alabama Public Health Association. Thomas Jefferson Hotel, Birmingham. March 23–25.

Arizona Public Health Association. Arizona Ambassador Hotel, Phoenix. April 20–22.

California, Northern, Public Health Association. Hotel Stockton, Stockton. February 5.

Idaho Public Health Association. Bannock Hotel, Pocatello, Idaho. April 29–30.

Illinois Public Health Association. St. Nicholas Hotel, Springfield. April 21–22.

Indiana Public Health Association with Middle States Public Health Association. Hotel Severin, Indianapolis. April 27–29.

Iowa Public Health Association. Fort Des Moines Hotel, Des Moines. April 11–12.

Kansas Public Health Association. Broadview Hotel, Wichita, Kans. April 18–20.

Kentucky Public Health Association. Sheraton Hotel, Louisville. April 5–7.

Middle States Public Health Association with Indiana Public Health Association. Hotel Severin, Indianapolis, Ind. April 27–29.

Montana Public Health Association. Eastern Montana College of Education, Billings. April 13–14.

New Mexico Public Health Association. La Fonda Hotel, Santa Fe. April 20–22.

Oklahoma Public Health Association. Biltmore Hotel, Oklahoma City. March 9–11.

Puerto Rico Public Health Association. San Juan. February 3–6.

Texas Public Health Association. Buccaneer Hotel, Galveston. February 21–24.

Utah Public Health Association. Union Bldg., University of Utah, Salt Lake City. April 25–26.

Southern Branch, APHA. Peabody Hotel, Memphis, Tenn. April 13–15.

United States-Mexico Border Public Health Association. Hermosillo, Sonora. April 4–8.

Meetings of Other Organizations:

American Camping Association—Biennial. San Francisco, Calif. March 2–5.

American Academy of Pediatrics. Atlantic City, N. J. April 20–22.

American Association of Industrial Nurses—Industrial Health Conference. Rochester, N. Y. April 26–28.

American Society of Psychosomatic Dentistry and Medicine. Shoreham Hotel, Washington, D. C. March 11–13.

Child Study Association. New York, N. Y. March 21.

National Health Council. National Health Forum and 40th Annual Meeting. Miami, Fla. March 13–18.

National Multiple Sclerosis Society. New York, N. Y. March 21.

National Social Welfare Assembly. New York, N. Y. April 25.

National Society for the Prevention of Blindness. Denver, Colo. March 30–April 1.

Royal Society of Health Congress. Torquay, Devon, England. April 25–29.

Third International Congress on Medical Records. Edinburgh, Scotland. April 24–30.

White House Conference on Children and Youth. Washington, D. C. March 27–April 2.

Weed Control Society of America. Denver, Colo. February 22–25.

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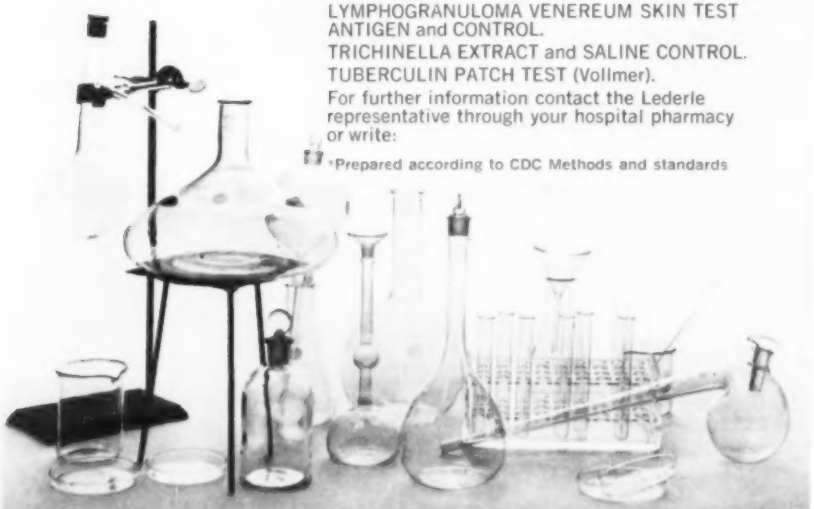

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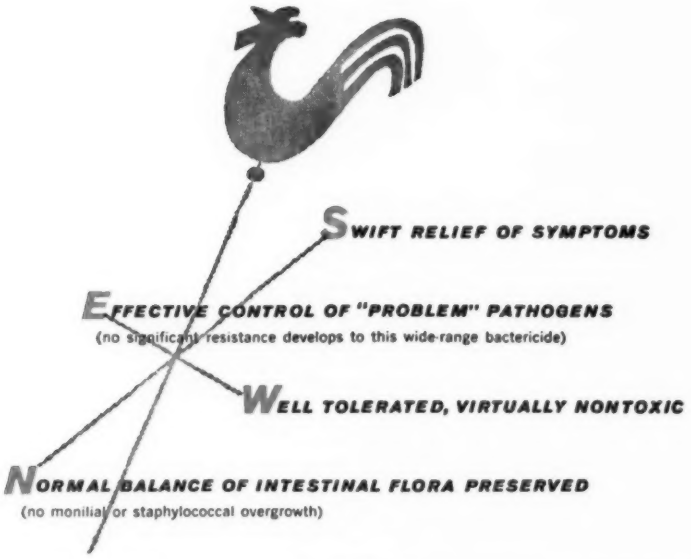
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Galeota, W. R., and Moranville., B. A.: Student Medicine (in press)

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